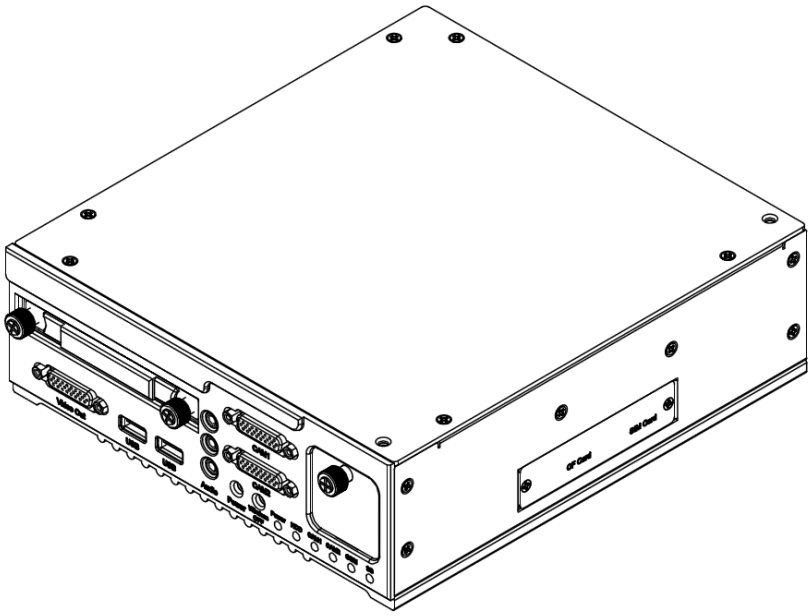
I-VC5

User Manual



2010 July V0

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Safety Information

Your I-VC5 is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface or secure on wall with the provided rail. Do not secure the system on any unstable plane or without the rail.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. Never insert objects of any kind into the ventilation openings.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between 0˚C and 60˚C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before cleaning the system.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not function properly even if you follow the operating instructions.

- The system was dropped or the cabinet is damaged.

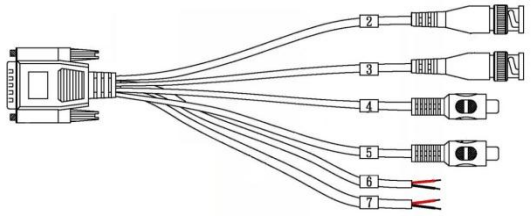
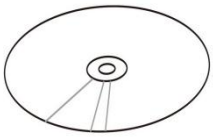
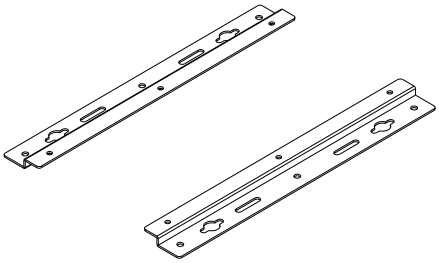
Lithium-Ion Battery Warning

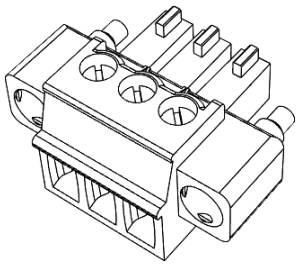
CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

Accessories

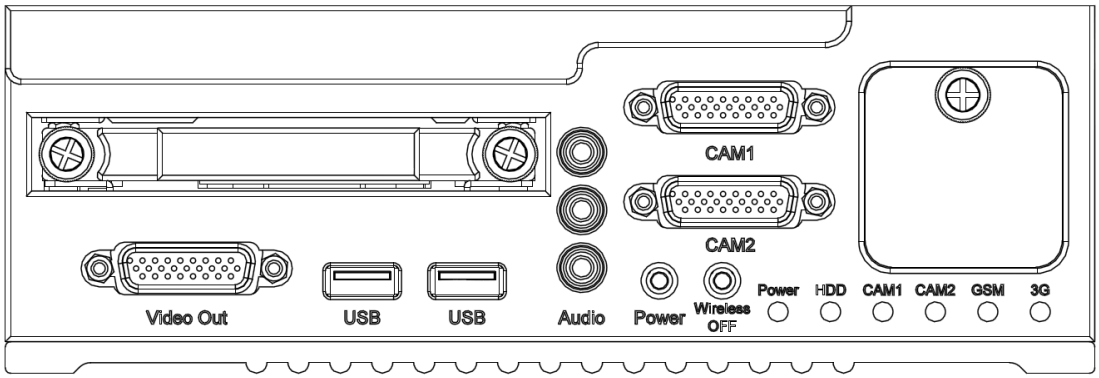
	
a. Camera Extension Cable x 2 (Opt.)	b. Video Out Extension Cable x 1
	
c. Driver CD x 1	d. Power Cable x 3
	
e. Wireless LAN Antenna x 1 (optional)	f. Mounting Bracket Kit x 1 (Optional)
g. 3G Antenna x 1 (optional)	h. GPS Antenna x 1 (Optional)

	
i. Power Block x 1	

Components

Front View

Refer to the diagram below to identify the components on this side of the system.



Video Out

This is an integrated connector contains LVDS, USB and 12VDC. It intent for connect with display which use LVDS signals.

USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

Audio

Those three stereo headphone jacks (3.5mm) are used to be LINE IN, LINE OUT and MIC audio connection. The upper stereo headphone jack (3.5mm) is used to connect the audio signal into system to record or bypass it to storage or LINE OUT. The middle stereo audio jack (3.5mm) is used to connect the system's audio out signal to amplified speakers or headphones. The lower jack is designed to connect the microphone used for video conferencing, voice narrations, or simple audio recordings.

CAM1/CAM2 (DVR configuration only)

Connectors use with specified cable to record image from video camera.

Power Switch

The power switch allows powering ON and OFF the system.

Wireless Off Switch (3G module configuration only)

The switch is reserve for turn off 3G module with specified condition. It's no use for the other configuration. Contact with your sales to get more detail about this.

Power LED

The power LED illuminated when system been power on.

HDD

The hard disk LED blinks when data is being written into or read from the hard disk drive.

CAM1/CAM2 LED

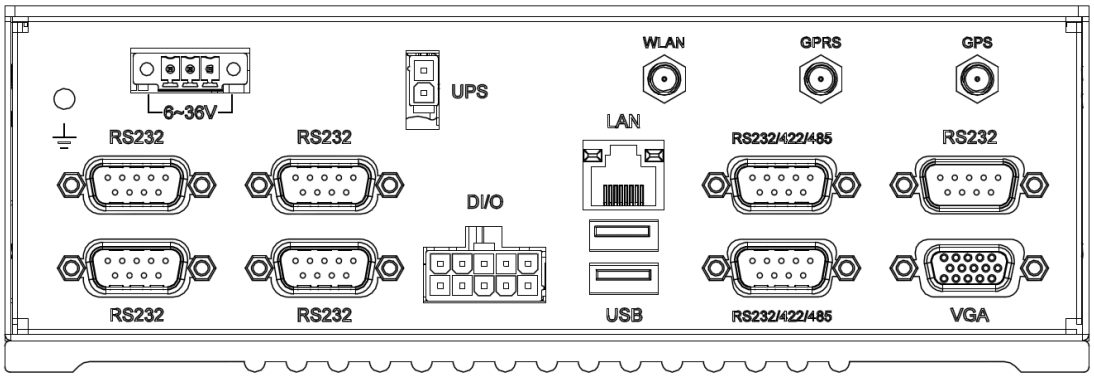
The LEDs are reserve for indicate CAM1/CAM2 activity by software. Contact with your sales to get more detail about this.

GSM/3G LED

Contact with your sales to get more detail about this.

Rear View

Refer to the diagram below to identify the components on this side of the system.



⏚

Chassis ground for ground ring attach usage. Connect ground-ring to vehicle chassis to get better grounding performance.

6~36V

Vehicle power input for 12V/24V car battery system. Apply specified power source with correct cable connection to source system.

UPS (Vehicle configuration only)

Connect to specified UPS power unit to get back-up power in vehicle application. I-VC5 will charge UPS power unit automatically if the unit meet requirement. **IT MIGHT CAUSE DAMAGE IF NOT FOLLOW WITH SYSTEM REQUIREMENT**. Always contact with your sales before use this feature.

RS232

Communication or serial port is compatible with RS-232 interface.

RS232/422/485

Communication or serial port is compatible with RS-232 interface in normal setting. Support RS422/485 signal/protocol with specified setting on mainboard.

VGA

Video Graphic Array (VGA) port supports a VGA-compatible device such as a monitor or projector. The system default display output port.

LAN

The eight-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

DI/O

Numbers general purpose digital I/O connections.

WLAN (Wireless LAN configuration only)

Wireless LAN antenna connector.

GPRS (3G module configuration only)

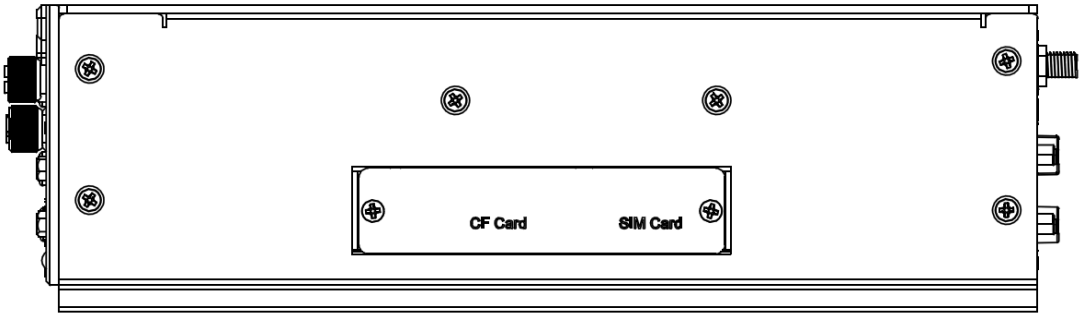
3G/GPRS antenna connector.

GPS (GPS module configuration only)

GPS antenna connector.

Side View

Refer to the diagram below to identify the components on this side of the system.



CF Card / SIM Card

Compact flash socket and SIM card socket cover. Access CF and SIM card with remove this cover.

Specification

Construction	Aluminum/Steel
Chassis Color	Black
Storage	2.5” 40GB SATA HDD x 1 / removable 2.5” 80GB SATA HDD x 1
Mounting	Desktop or wall mount
Dimensions	207.8(W) x 70.0(H) x 224.7(D)mm (8.18” x 2.76” x 8.85”)
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Storage Temperature	-20°C ~ 95°C
Relative Humidity	5~95% @60°C (non-condensing)
Vibration	Operating: MIL-STD-810F, Method 514.5, Category 20, Ground Vehicle – Highway Truck (3 axes) Non-operating: MIL-STD-810F, Method 514.5, Category 24, Minimum Integrity Test (3 axes)
Shock	MIL-STD-810F, Method 516.5, Procedure I, sawtooth: Operating: 20G / 11msec Non-operating: 40G /11msec
Regulation	CE/FCC approval Designed to meet ISO-7637-II Designed to meet UL
RoHS	Available

· This specification is subject to change without prior notice.

Installation

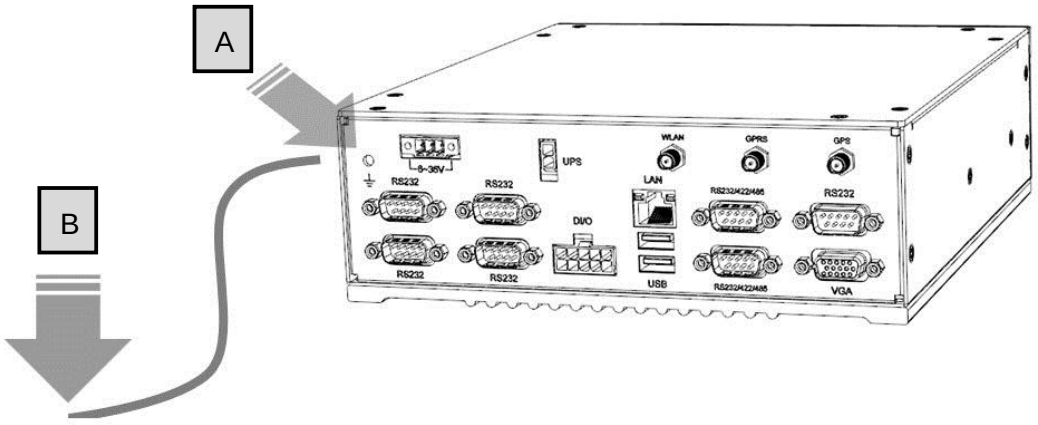
Before you start

Please take a moment and read this section before you install the system in your vehicle. Often times, rushing into installing the system can result in serious damage to I-VC5 and probably your vehicle electrical system. **Always double check the polarity** of your wires with a voltmeter.

Avoid using the cigarette plug as a power source, often times the contacts are not capable of delivering high current to I-VC5

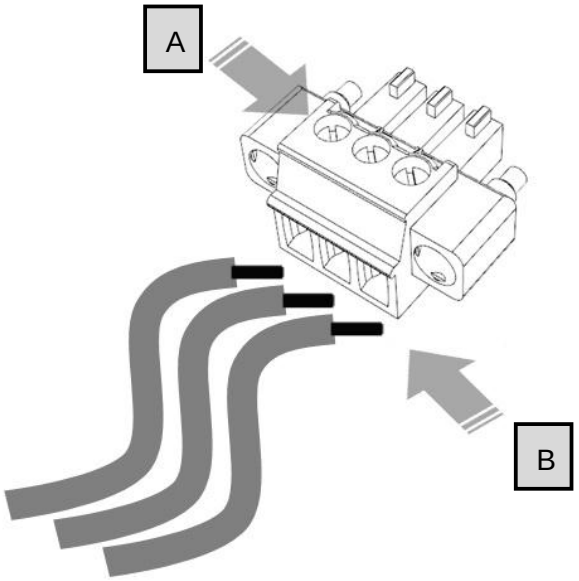
Installing ground ring

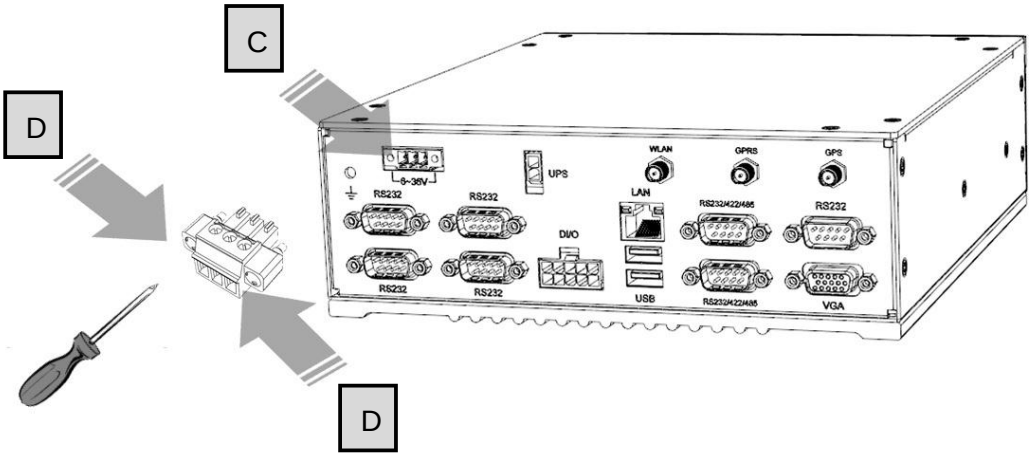
To have good ground connection between I-VC5 and your vehicle, properly install ground wire are important.



1. Disassembling M4 screw from point-A.
2. Chose adaptable wire (suggest at least 18AWG with 105^0C ability wire)with O-ring (accept M4 screw) and use original M4 screw secure the O-ring on point-A.
3. Secure point-B on your vehicle body with proper screw.

Installing power cable





1. Losing screws on power block on point-A.
2. Secure power cable (in accessary bag) on power block (in accessary bag), point-B.
3. Tie screws on power block on point-A.
4. Plug power block to I-VC5 car battery connector, point-C, and use screwdriver to secure power block.
5. Connecting power cable to car battery. Car battery + for positive polarity of car battery, Car battery – for negative polarity of car battery.
6. Connecting Ignition (ACC) cable to corresponding connection of your vehicle.

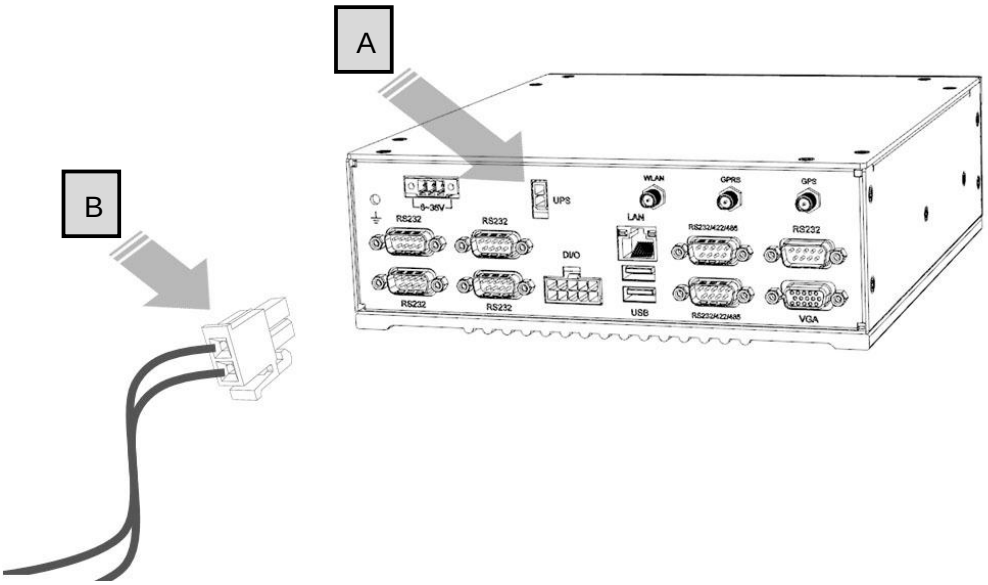
Always double check the polarity of your wires with a voltmeter.

Power challenges in a Vehicle:
One of most difficult tasks of operating I-VC5 in a vehicle is power consumption while the I-VC5 in OFF state. Even when I-VC5 is OFF, it will still consume about couple mA from car battery to keep internal power scheme working.

No matter how big your battery is, you will eventually drain it if proper actions are not taken.

Engine Cranks, under-voltage and over-voltage situations.
Another difficult task is car battery voltage level. While car batteries are rated at 12V, they actually provide voltages in between 7-11V (engine cranks) or as high as 80 volts (load dump).
Most of the times, your battery will stay at 13.5V (while car is running) but extra precautions need to take place in order to prevent such situations. I-VC5 can operate as low as 6V and as high as 36V with input voltage clamping and reverse protection.

Installing UPS cable



1. Plug UPS cable (UPS configuration), point-B, to I-VC5 UPS connector, point-A.
2. Connecting UPS cable to UPS battery then put battery into UPS box. Battery + for positive polarity of car battery, Battery – for negative polarity of car battery.

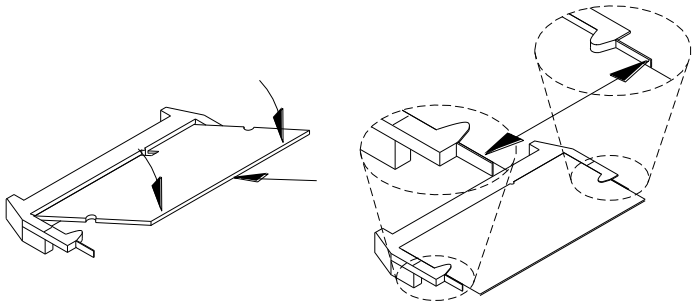
Installing the memory

The IB808 board supports one DDR2 memory socket that can support up to 4GB memory size, DDR2 533/667/800 (w/o ECC function).

Installing and Removing Memory Modules

To install the DDR2 modules, locate the memory slot on the board and perform the following steps:

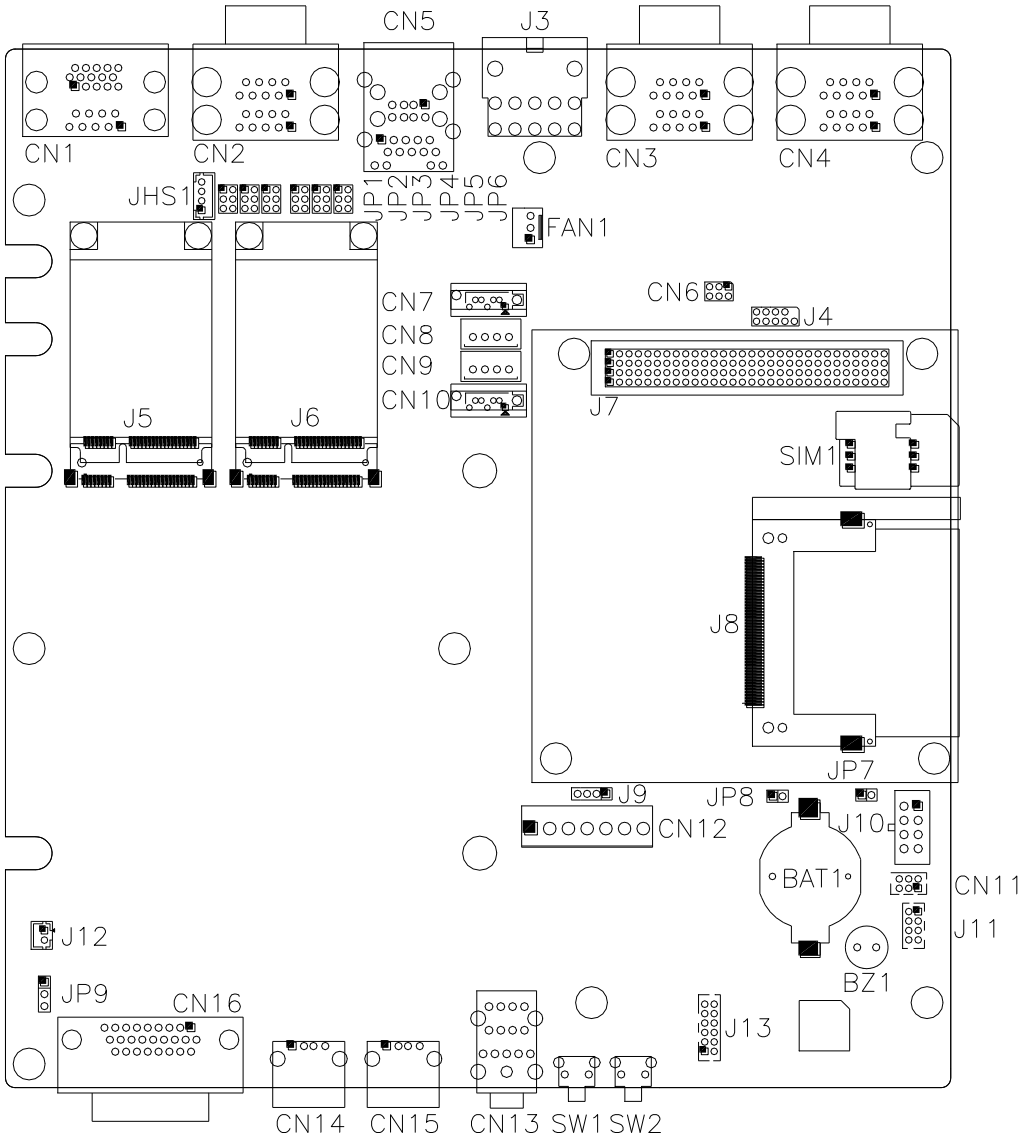
1. Hold the DDR2 module so that the key of the DDR2 module aligns with that on the memory slot. Insert the module into the socket at a slight angle (approximately 30 degrees). Note that the socket and module are both keyed, which means that the module can be installed only in one direction.
2. To seat the memory module into the socket, apply firm and even pressure to each end of the module until you feel it slip down into the socket.
3. With the module properly seated in the socket, rotate the module downward. Continue pressing downward until the clips at each end lock into position.
4. To remove the DDR2 module, press the clips with both hands.



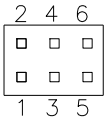
Setting Jumper

Jumpers are used on IB808 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the connectors on IB808 and their respective functions.

Jumper Locations on IB808

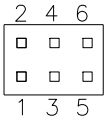


JP1, JP2, JP3: RS232/422/485 (COM3) Selection



COM3 Function	RS-232	RS-422	RS-485
Jumper Setting (pin closed)	JP2: 1-2 JP1: 3-5 & 4-6 JP3: 3-5 & 4-6	JP2: 3-4 JP1: 1-3 & 2-4 JP3: 1-3 & 2-4	JP2: 5-6 JP1: 1-3 & 2-4 JP3: 1-3 & 2-4

JP4, JP5, JP6: RS232/422/485 (COM4) Selection



COM4 Function	RS-232	RS-422	RS-485
Jumper Setting (pin closed)	JP5: 1-2 JP4: 3-5 & 4-6 JP6: 3-5 & 4-6	JP5: 3-4 JP4: 1-3 & 2-4 JP6: 1-3 & 2-4	JP5: 5-6 JP4: 1-3 & 2-4 JP6: 1-3 & 2-4

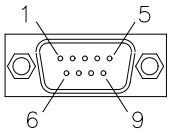
JP8: Clear CMOS Setting

JP8	Setting
OPEN	Normal
Closed	Clear CMOS

Connector pin definition

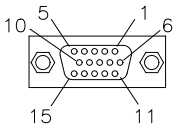
Rear Side

RS232/RS422/RS485:



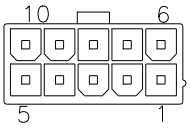
Pin #	Signal Name		
	RS-232	**R2-422**	**RS-485**
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	Ground	Ground	Ground
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

VGA



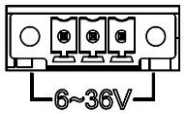
Pin #	Signal Name	Pin #	Signal Name
1	Red	**2**	Green
3	Blue	**4**	N.C.
5	GND	**6**	GND
7	GND	**8**	GND
9	N.C.	**10**	GND
11	N.C.	**12**	N.C.
13	HSYNC	**14**	VSYNC
15	NC		

DI/O (Digital I/O)



Pin #	Signal Name	Pin #	Signal Name
1	VCC	**2**	OUT1
3	OUT0	**4**	IN1
5	IN0	**6**	GND
7	OUT3	**8**	OUT2
9	IN3	**10**	IN2

Car Battery Input (6~36V)



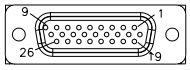
Pin #	Signal Name	Pin #	Signal Name
Left	Ignition (ACC)	Middle	Car Battery -
Right	Car Battery +		

Back Up Battery Input (UPS)

Pin #	Signal Name
Up	Battery +
Down	Battery -

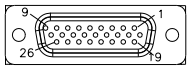
Front Side

Video Out



Pin #	Signal Name	Pin #	Signal Name
1	TXC-	2	LCD_GND
3	TX0+	4	TX1+
5	TX2+	6	ENABKL
7	USB_+5V	8	NC
9	USB_8P	10	TXC+
11	TX0-	12	TX1-
13	TX2-	14	+12V
15	5V/3.3V	16	NC
17	NC	18	USB_8N
19	Ground	20	Ground
21	Ground	22	Ground
23	+12V	24	NC
25	NC		USB_GND

CAM1/CAM2



Pin #	Signal Name	Pin #	Signal Name
1	TXC-	2	LCD_GND
3	TX0+	4	TX1+
5	TX2+	6	ENABKL
7	USB_+5V	8	NC
9	USB_8P	10	TXC+
11	TX0-	12	TX1-
13	TX2-	14	+12V
15	5V/3.3V	16	NC
17	NC	18	USB_8N
19	Ground	20	Ground
21	Ground	22	Ground
23	+12V	24	NC
25	NC		USB_GND

Driver Installation

This section describes the installation procedures for software and drivers under the Windows XP, Windows Vista and Windows 7. The software and drivers are included with the motherboard. If you find the items missing, please contact the vendor where you made the purchase. The contents of this section include the following:

IMPORTANT NOTE:

After installing your Windows operating system (Windows XP/ Vista/ 7), you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

Intel Chipset Software Installation Utility

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation under Windows XP/Vista/7.

1. Insert the drivers DVD into the DVD drive. Click ***Intel*** and then ***Intel(R) Chipset Software Installation Utility***.

Inside This CD...
Version : I-VC5 @1
Intel
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) Pineview Chipset Family Graphics Driver
Realtek High Definition Codec Audio Driver
Realtek GbE &FE Ethernet PCI-E NIC Driver
HC25 3G Wireless Module Driver

2. When the welcome screen to the Intel(R) Chipset Device Software appears, click ***Next*** to continue.

Intel® Chipset Device Software
Intel® Chipset Device Software
Welcome to the Setup Program
This setup program will install the Intel® Chipset Device Software onto this computer. It is strongly recommended that you exit all programs before continuing.
< Back
Next >
Cancel
Intel® Installation Framework

3.When the Setup Progress screen appears, click ***Next*** to continue.

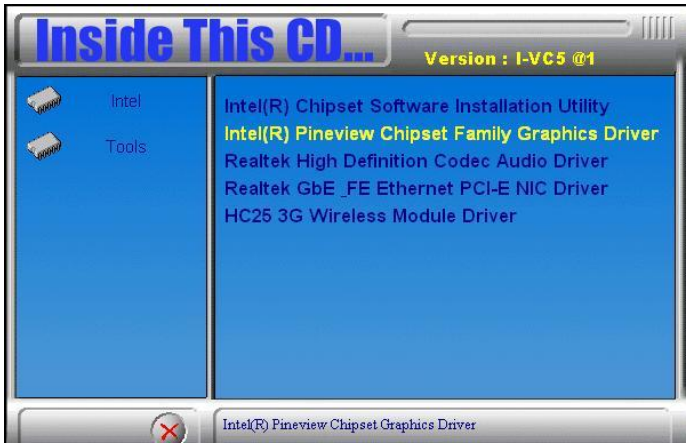
Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Progress
Please wait while the following setup operations are performed:
Installing Driver: Intel(R) ICH8 Family USB2 Enhanced Host Controller - 2836
Version: 9.1.1.1016
Installing Driver: Intel(R) ICH8 Family USB2 Enhanced Host Controller - 283A
Version: 9.1.1.1016
Installing Driver: Intel(R) ICH8M LPC Interface Controller - 2815
Version: 8.6.1.1002
Installing Driver: Intel(R) ICH8 Family PCI Express Root Port 1 - 283F
Version: 8.6.1.1002
Installing Driver: Intel(R) ICH8 Family PCI Express Root Port 4 - 2845
Version: 8.6.1.1002
Click Next to continue.
Next
Intel® Installation Framework

4. The Setup process is now complete. Click ***Finish*** to restart the computer and for changes to take effect.

Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Is Complete
intel
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

Intel Pineview Chipset Family Graphics Driver Installation

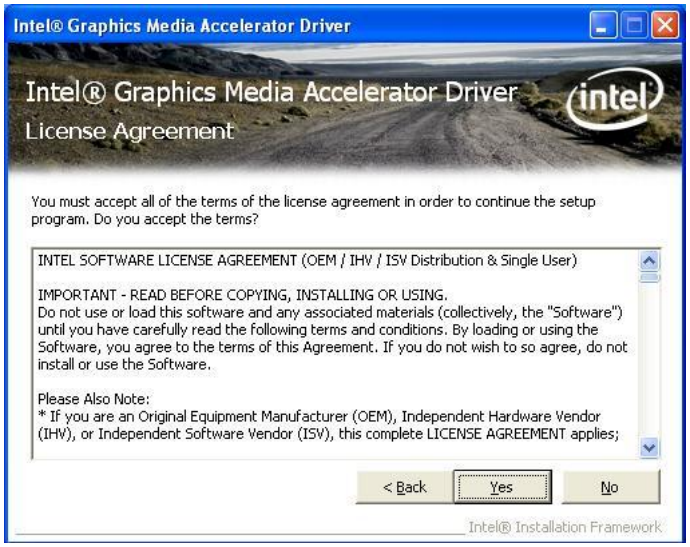
1. Insert the drivers DVD into the DVD drive. Click ***Intel*** and then ***Intel(R) Pineview Chipset Drivers***. Click ***Intel(R) Pineview Chipset Family Graphics Driver***.


Inside This CD...
Version : I-VC5 @1
Intel
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) Pineview Chipset Family Graphics Driver
Realtek High Definition Codec Audio Driver
Realtek GbE _FE Ethernet PCI-E NIC Driver
HC25 3G Wireless Module Driver
Intel(R) Pineview Chipset Graphics Driver

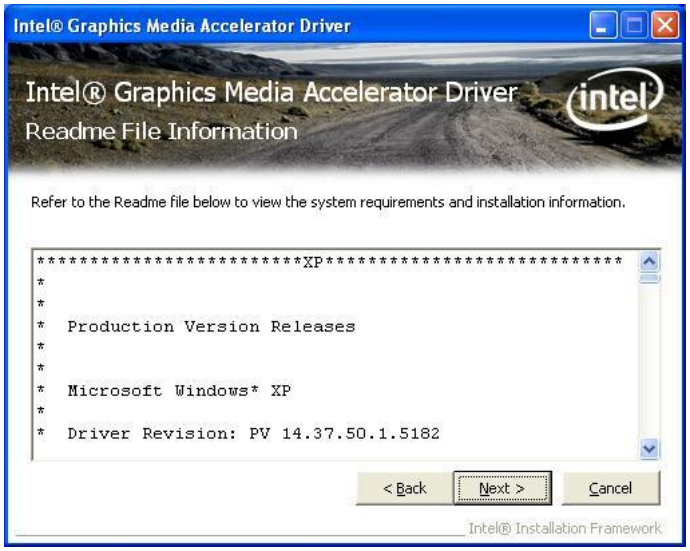
2. When the welcome screen of the Intel(R) Graphics Media Accelerator Driver appears, click ***Next*** to continue.

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
intel
Welcome to the Setup Program
This setup program will install the Intel® Graphics Media Accelerator Driver onto this computer. It is strongly recommended that you exit all programs before continuing. Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

3. Click ***Yes*** to to agree with the license agreement and continue.


Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
License Agreement
intel
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework

4. Click ***Next*** in the Readme File Information screen.


Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Readme File Information
intel
Refer to the Readme file below to view the system requirements and installation information.
**********XP**********
* Production Version Releases
* Microsoft Windows* XP
* Driver Revision: PV 14.37.50.1.5182
< Back
Next >
Cancel
Intel® Installation Framework

5. Click ***Next*** in the Setup Progress screen.

6. Setup is now complete. Click ***Finish*** to restart the computer and for changes to take effect.

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Setup Is Complete
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

Realtek High Definition Codec Audio Driver Installation

1. Insert the drivers DVD into the DVD drive. Click ***Intel*** and then ***Realtek High Definition Codec Audio Driver.***

Inside This CD...
Version : I-VC5 @1
Intel
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) Pineview Chipset Family Graphics Driver
Realtek High Definition Codec Audio Driver
Realtek GbE _FE Ethernet PCI-E NIC Driver
HC25 3G Wireless Module Driver
Realtek High Definition Codec Audio Driver

2.When the welcome screen to InstallShield Wizard appears, click ***Next*** to start the installation.

3.When the InstallShieldWizard has finished performing maintenance operations on Realtek High Definition Codec Audio Driver, click ***Finish*** to restart the computer.

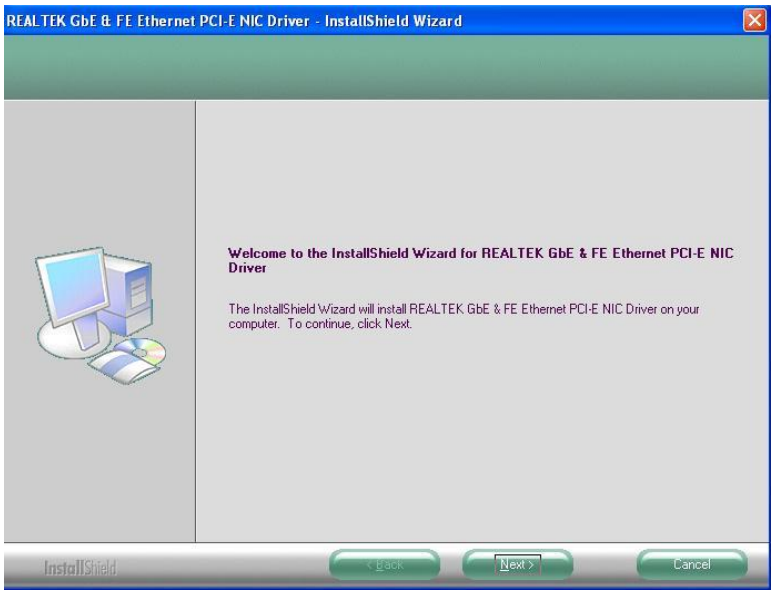
Realtek GbE_FE Ethernet PCI-E NIC Drivers Installation

Follow the steps below to install Realtek RTL8111DL LAN Drivers.

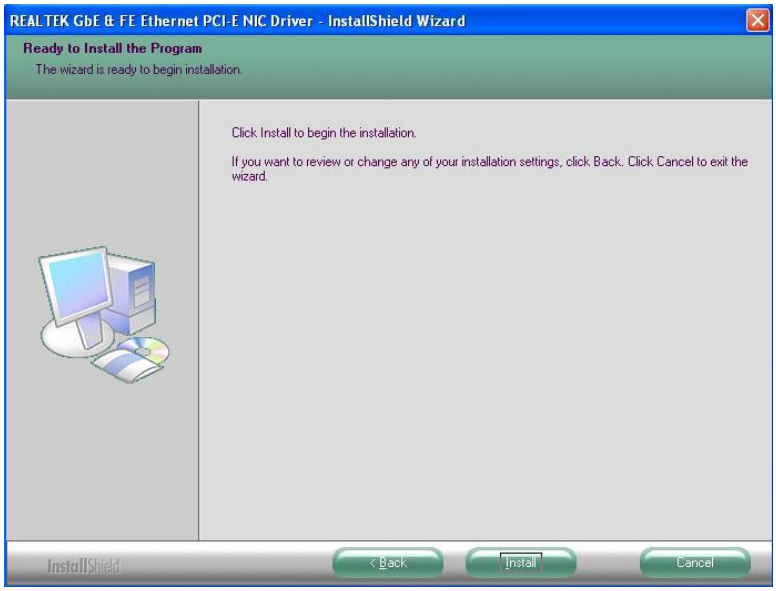
1. Insert the drivers DVD into the DVD drive. Click ***Intel*** and then ***Realtek GbE_FE Ethernet PCI-E NIC Driver***.

Inside This CD...
Version : I-VC5 @1
Intel
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) Pineview Chipset Family Graphics Driver
Realtek High Definition Codec Audio Driver
Realtek GbE _FE Ethernet PCI-E NIC Driver
HC25 3G Wireless Module Driver

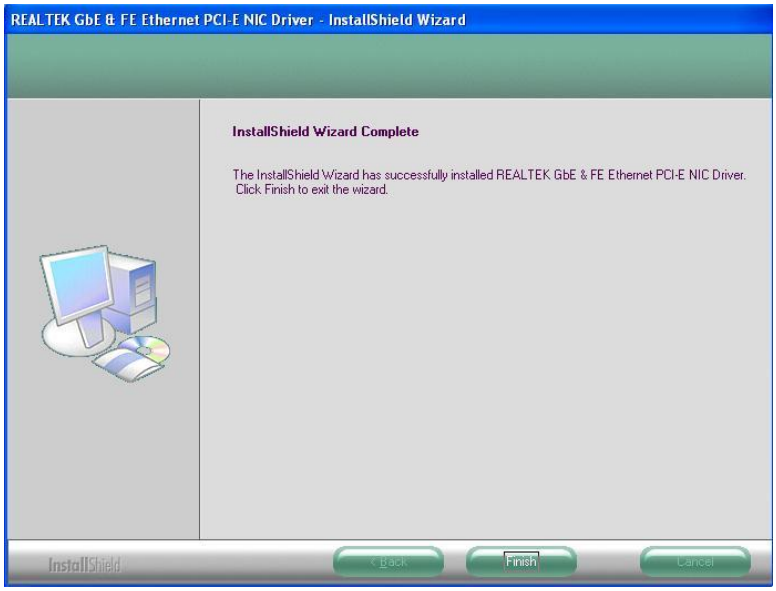
2. In the welcome screen of the InstallShield Wizard for REALTEK GbE & FE Ethernet PCI-E NIC Driver, click ***Next***.


REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
Welcome to the InstallShield Wizard for REALTEK GbE & FE Ethernet PCI-E NIC Driver
The InstallShield Wizard will install REALTEK GbE & FE Ethernet PCI-E NIC Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

3. Click ***Install*** to begin the installation.

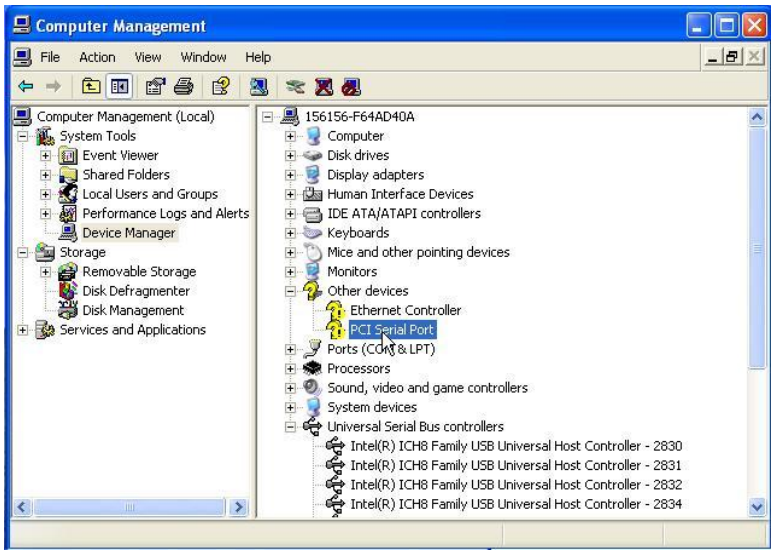

REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

4. InstallShield Wizard is complete. Click ***Finish*** to exit the wizard.

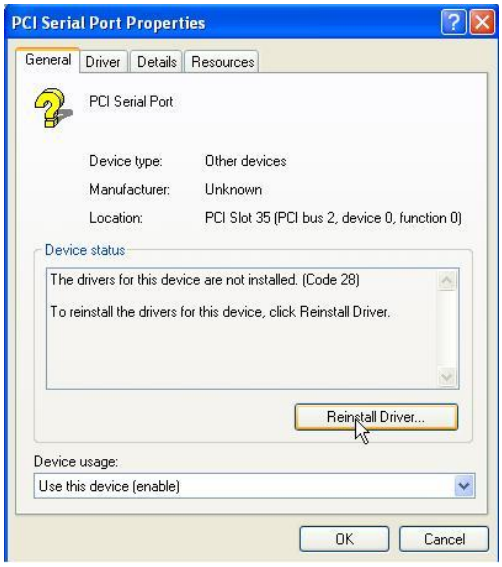

REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed REALTEK GbE & FE Ethernet PCI-E NIC Driver. Click Finish to exit the wizard.
InstallShield
< Back
Finish
Cancel

PCI-E Serial Ports Driver Installation

1. In the Windows OS, go to the Computer Management screen. In the ‘Other devices’ as shown, right click the “PCI Serial Port Properties”.



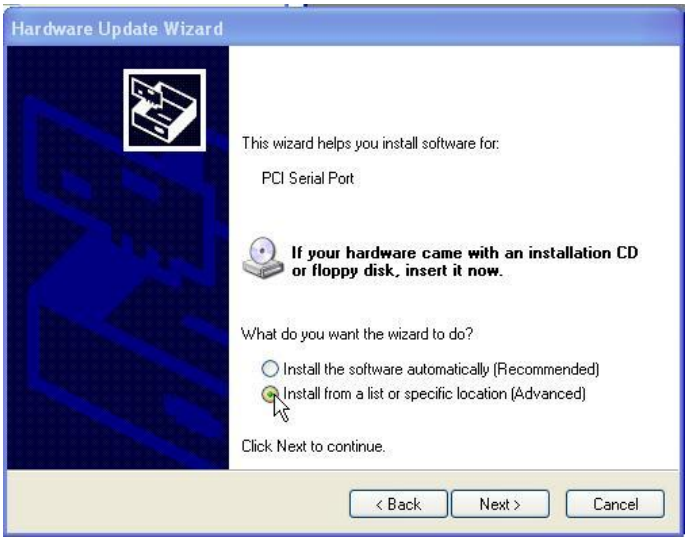
2. In the PCI Serial Port Properties screen, click ***Reinstall Driver***.



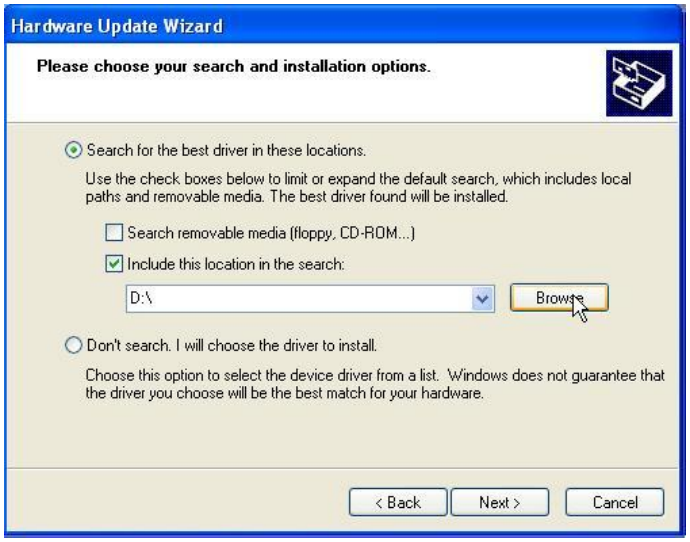
3. In the Hardware Update Wizard screen, select “No, not this time” and click ***Next*** to continue.

Hardware Update Wizard
Welcome to the Hardware Update Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

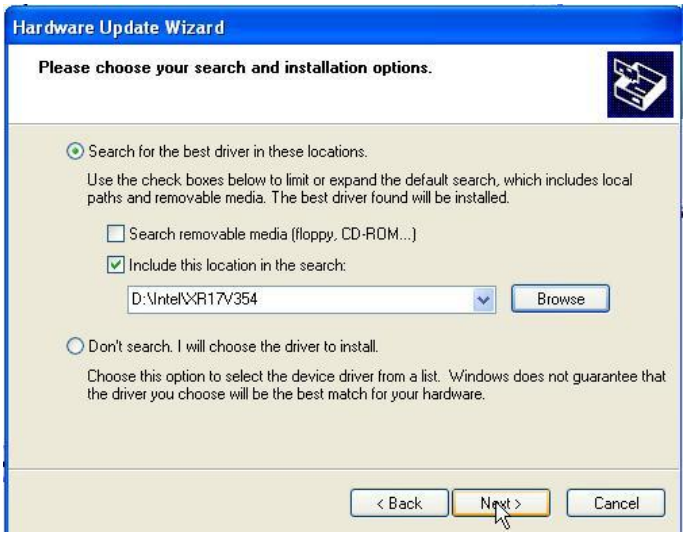
4. Select “Install from a list or specific location (Advanced), and click ***Next*** to continue.


Hardware Update Wizard
This wizard helps you install software for:
PCI Serial Port
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

5. To choose the “search” and “installation” options, click the checkbox of “Include this location in the search”, and click ***Browse*** to continue.


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
D:\
Browse...
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

6. Choose the folder “XR17V354” under the “Intel” main folder of the driver disk, and click ***OK*** to continue.


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
D:\Intel\XR17V354
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

7. Click ***Continue Anyway***.

Hardware Installation
The software you are installing for this hardware:
OEM's 4-Port UART PCI-Express Card
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

8. Click ***Finish*** to close the wizard.

9. There are a total of four serial ports. Therefore, the Hardware Update Wizard procedure has to be repeated for the rest of the serial ports.

HC25 3G Wireless Module Driver Installation

1. Insert the drivers DVD into the DVD drive. Click ***Intel*** and then ***HC25 3G Wirerless Module Driver***.

Inside This CD...
Version : I-VC5 @1
Intel
Tools
Intel(R) Chipset Software Installation Utility
Intel(R) Pineview Chipset Family Graphics Driver
Realtek High Definition Codec Audio Driver
Realtek GbE _FE Ethernet PCI-E NIC Driver
HC25 3G Wireless Module Driver

2. The InstallShield Wizard will install HC 25 Connection Manager on the computer. To continue, click ***Install***.

HC25 Connection Manager - InstallShield Wizard
Welcome to the InstallShield Wizard for HC25 Connection Manager
The InstallShield(R) Wizard will install HC25 Connection Manager on your computer. To continue, click Install.
WARNING: This program is protected by copyright law and international treaties.
Install
Cancel

BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the board.

BIOS Introduction

The Award BIOS (Basic Input / Output System) installed in your computer system's ROM supports various processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

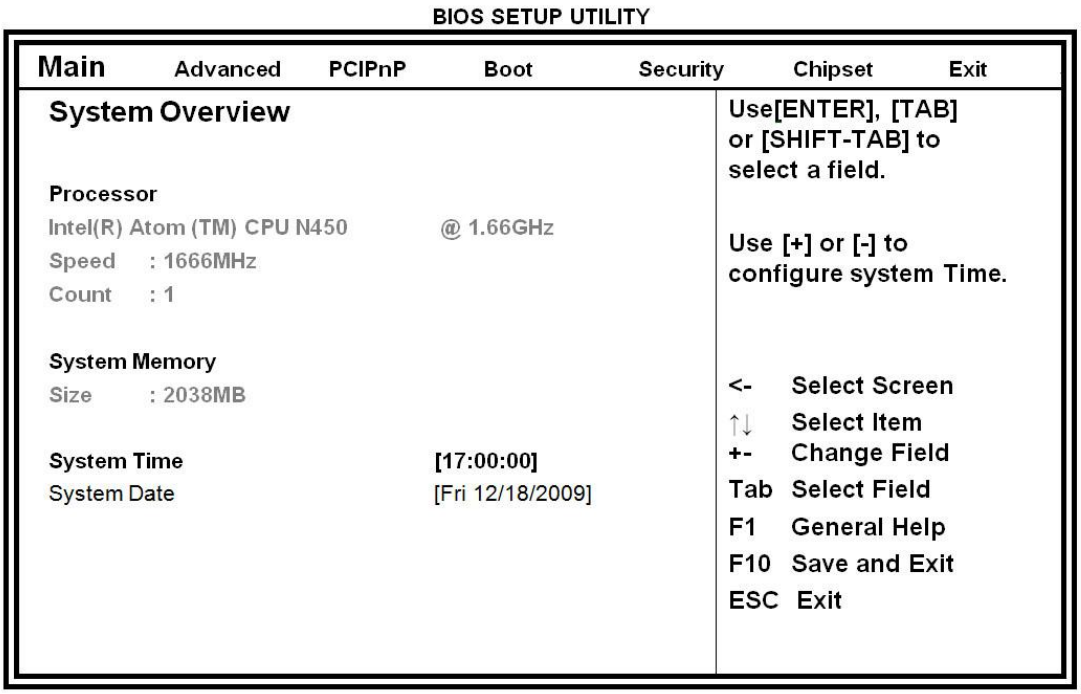
BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press <DEL> to Enter Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.



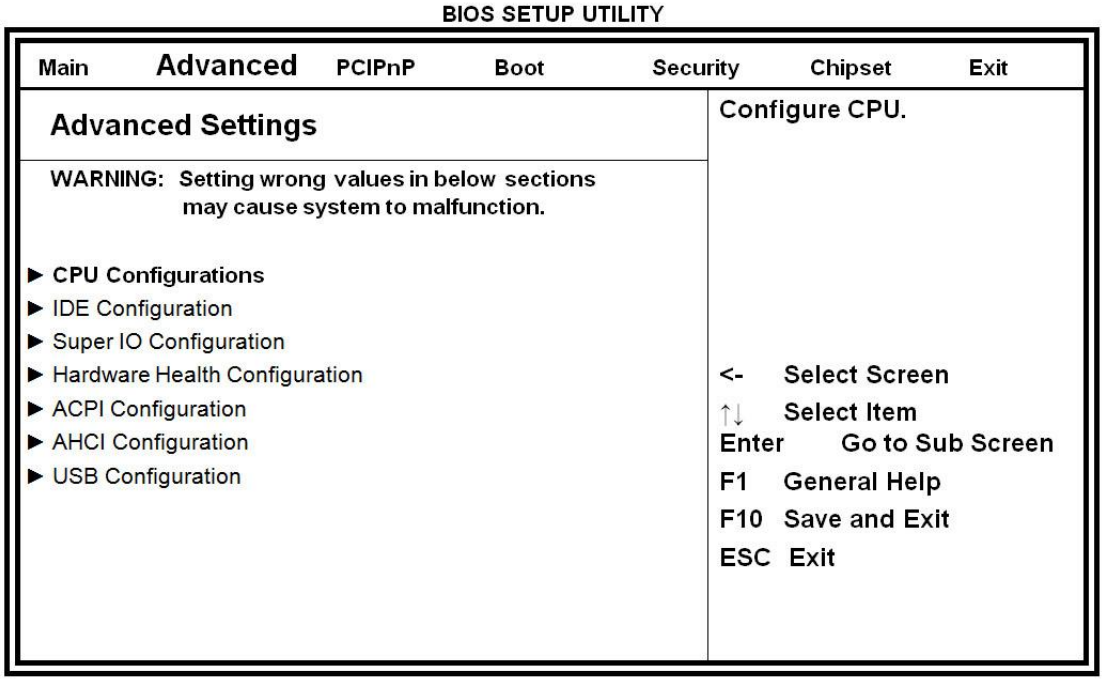
The section below the setup items of the Main Menu displays the control keys for this menu. At the bottom of the Main Menu just below the control keys section, there is another section, which displays information on the currently highlighted item in the list.

Note: *If the system cannot boot after making and saving system changes with Setup, the Award BIOS supports an override to the CMOS settings that resets your system to its default.*

Warning: *It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

Advance Settings

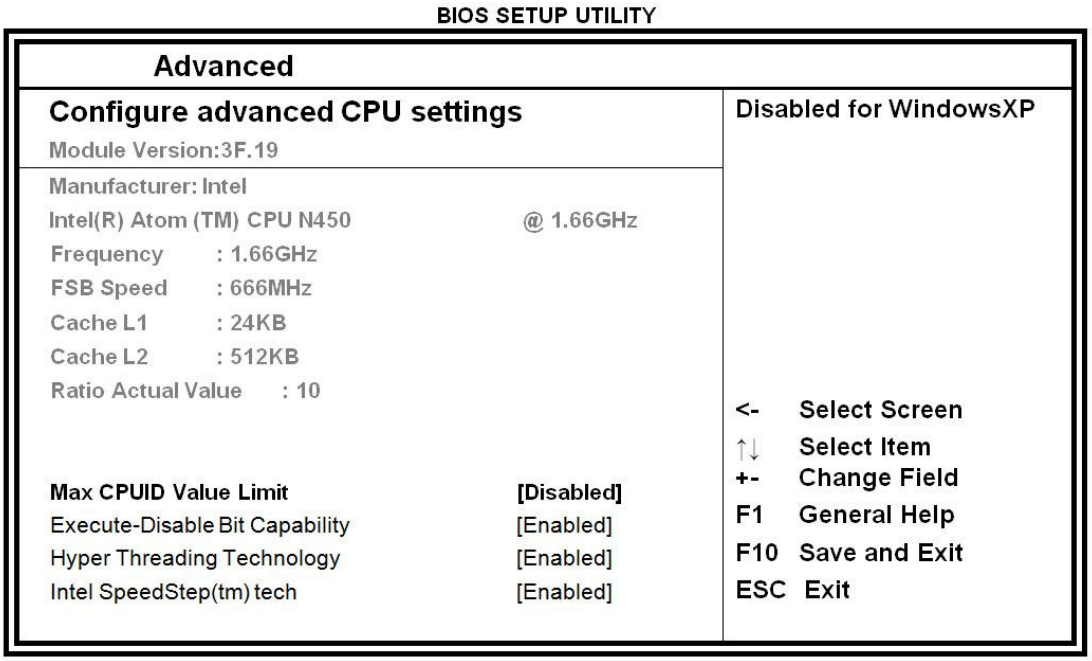
This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



The Advanced BIOS Settings contains the following sections:

- ► **CPU Configurations**
- ► **IDE Configuration**
- ► **Super IO Configuration**
- ► **Hardware Health Configuration**
- ► **ACPI Configuration**
- ► **AHCI Configuration**
- ► **USB Configuration**

The fields in each section are shown in the following pages, as seen in the computer screen. Please note that setting the wrong values may cause the system to malfunction. If unsure, please contact technical support of your supplier.



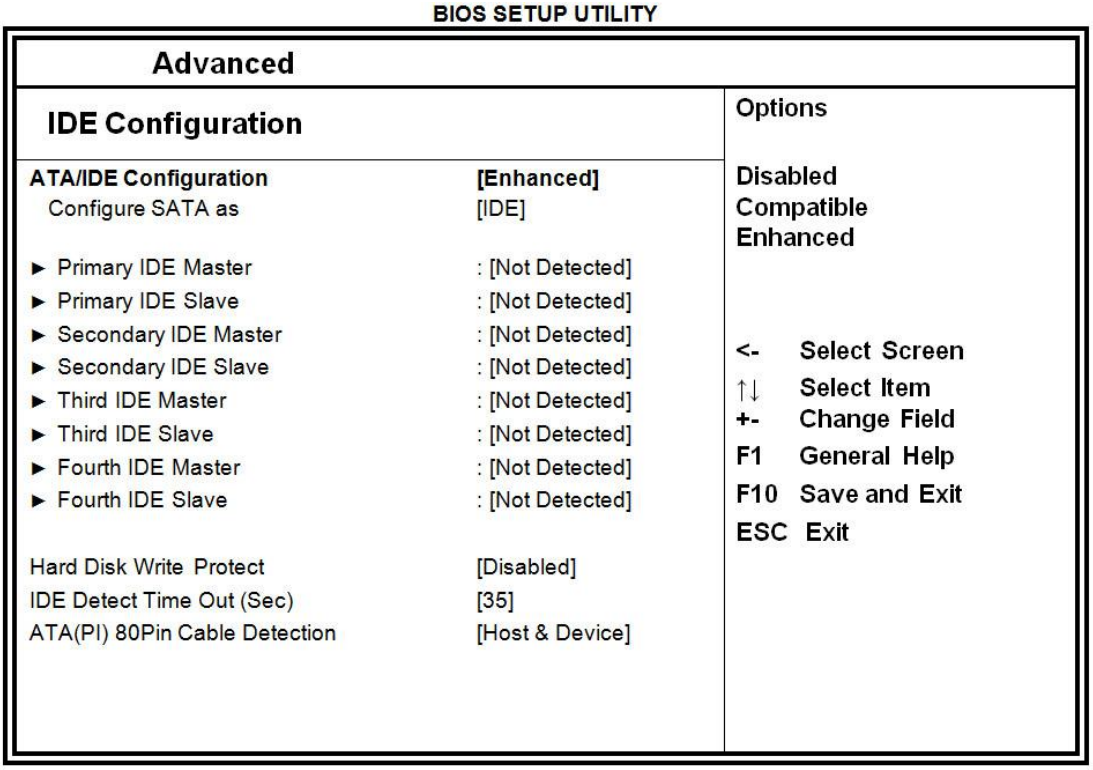
The CPU Configuration menu shows the following CPU details:
Manufacturer: the name of the CPU manufacturer
Brand String: the brand name of the CPU being used
Frequency: the CPU processing speed
FSB Speed: the FSB speed
Cache L1: the CPU L1 cache size
Cache L2: the CPU L2 cache

Max CPUID Value Limit
Disabled for WindowsXP.

Execute-Disable Bit Capability
XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS.

Hyper Threading Technology
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled, only one thread per enabled core is enabled.

Intel SpeedStep(tm) tech (Pineview-M)
Disabled: Disable GV3
Enabled: Enable GV3


BIOS SETUP UTILITY
Advanced
IDE Configuration
ATA/IDE Configuration [Enhanced]
Configure SATA as [IDE]
► Primary IDE Master : [Not Detected]
► Primary IDE Slave : [Not Detected]
► Secondary IDE Master : [Not Detected]
► Secondary IDE Slave : [Not Detected]
► Third IDE Master : [Not Detected]
► Third IDE Slave : [Not Detected]
► Fourth IDE Master : [Not Detected]
► Fourth IDE Slave : [Not Detected]
Hard Disk Write Protect [Disabled]
IDE Detect Time Out (Sec) [35]
ATA(PI) 80Pin Cable Detection [Host & Device]
Options
Disabled
Compatible
Enhanced
<- Select Screen
↑↓ Select Item
+- Change Field
F1 General Help
F10 Save and Exit
ESC Exit

The IDE Configuration menu is used to change and/or set the configuration of the IDE devices installed in the system.

ATA/IDE Configuration

(1) Disabled.

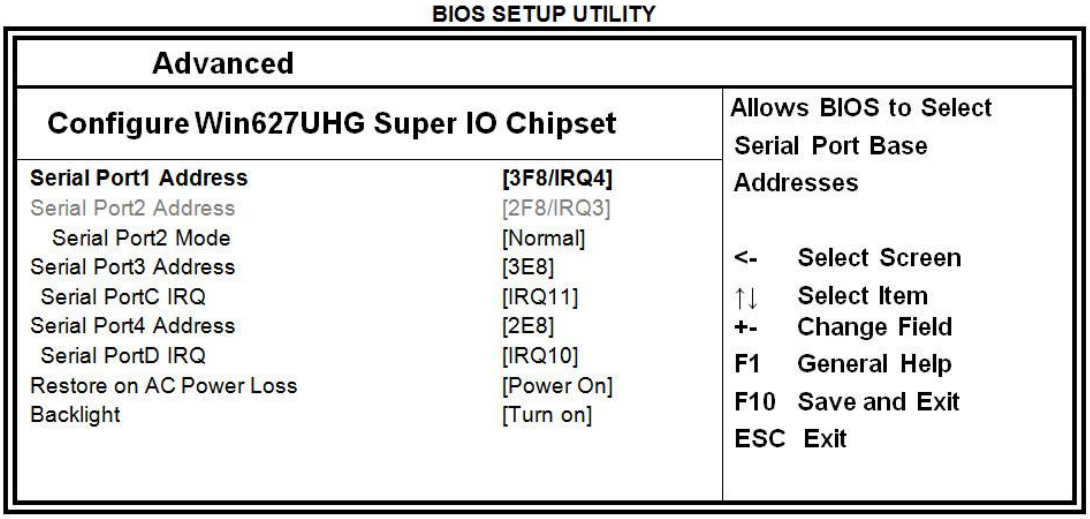
(2) Compatible.

(3) Enhanced.

Configure SATA as

(1) IDE Mode.

(2) AHCI Mode.



Onboard Serial Port

The default values are:

Serial Port 1: 3F8/IRQ4

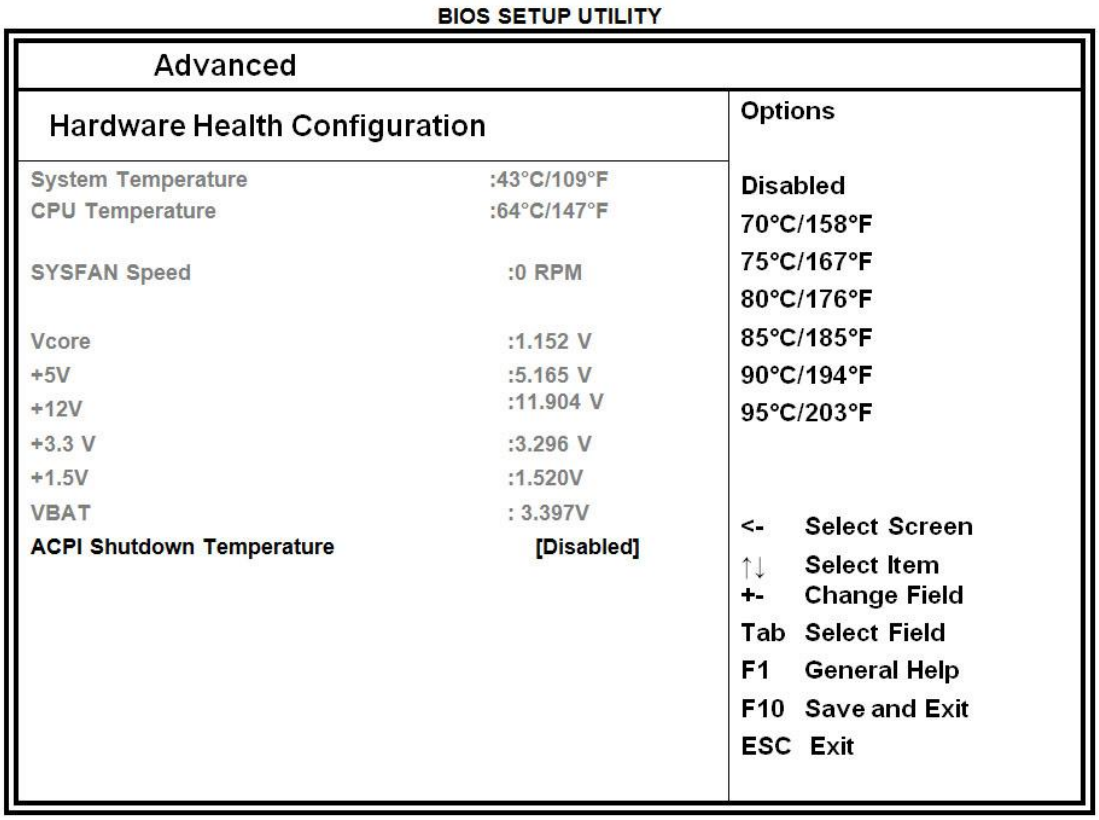
Serial Port 2: 2F8/IRQ3

Serial Port 3: 3E8/IRQ11

Serial Port 4: 2E8/IRQ10

Restore on AC Power Loss

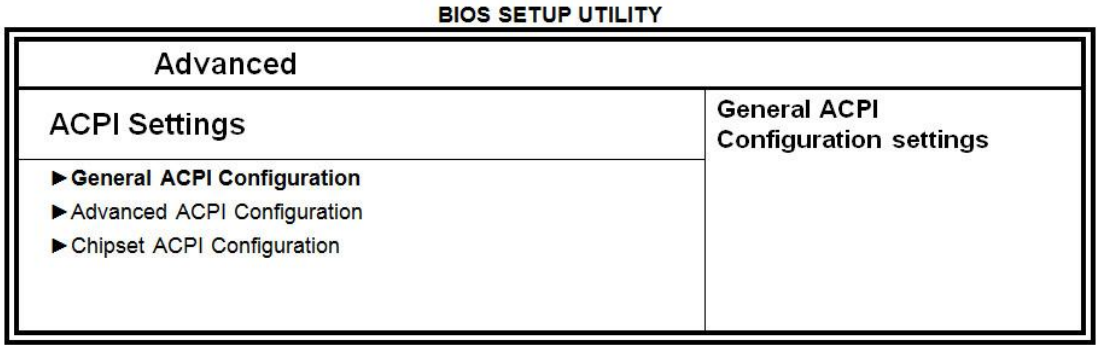
This field sets the system power status whether *Power On or Power Off* when power returns to the system from a power failure situation.

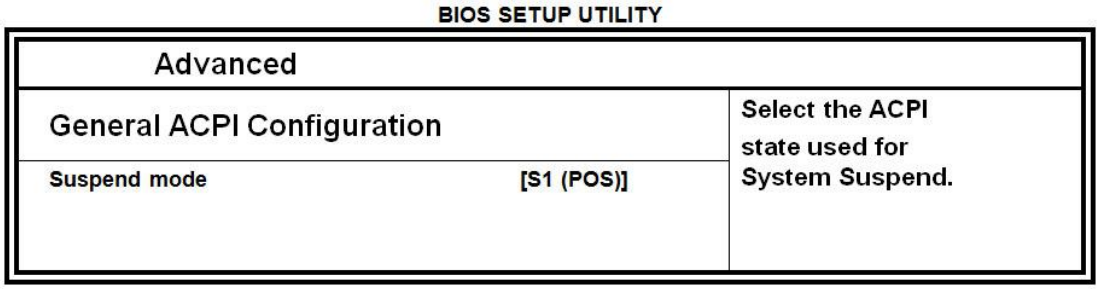


The Hardware Health Configuration menu is used to show the operating temperature, fan speeds and system voltages.

ACPI Shutdown Temperature

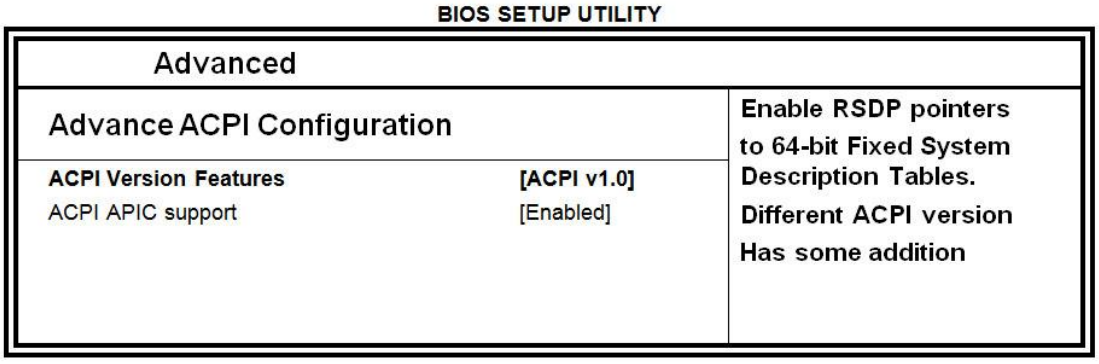
The system will shut down automatically under OS with ACPI mode, when the CPU temperature reaches the configured temperature.

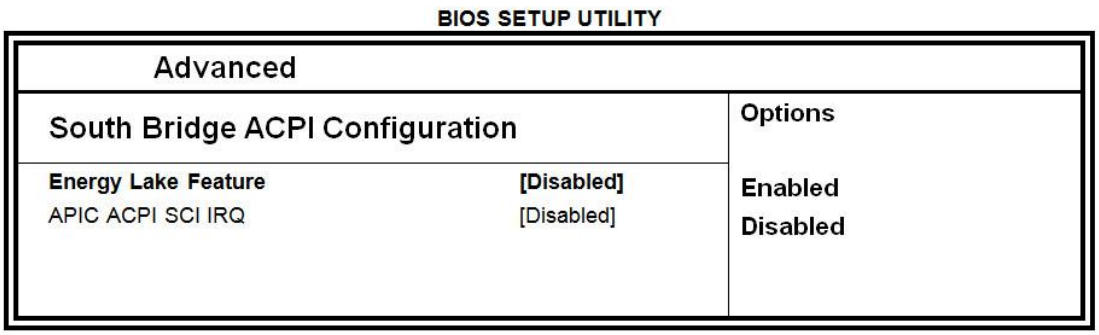


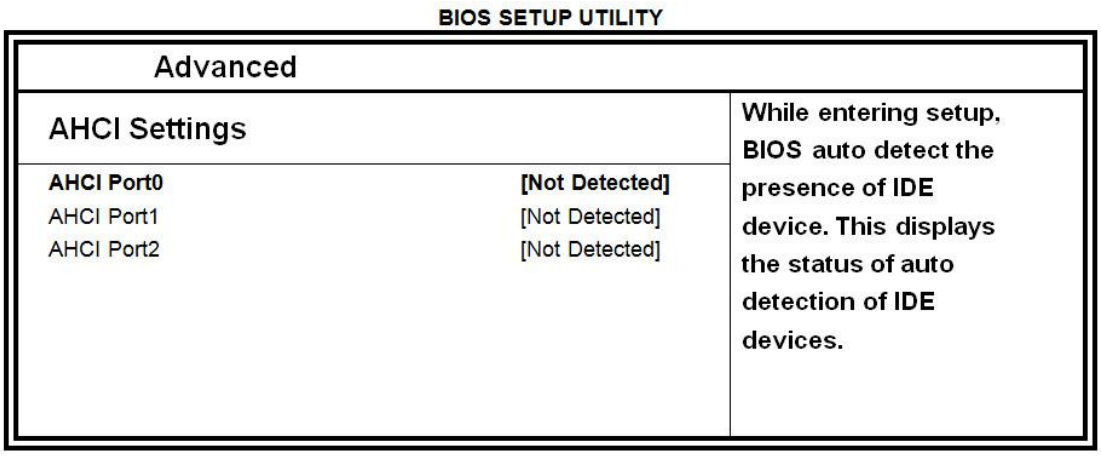


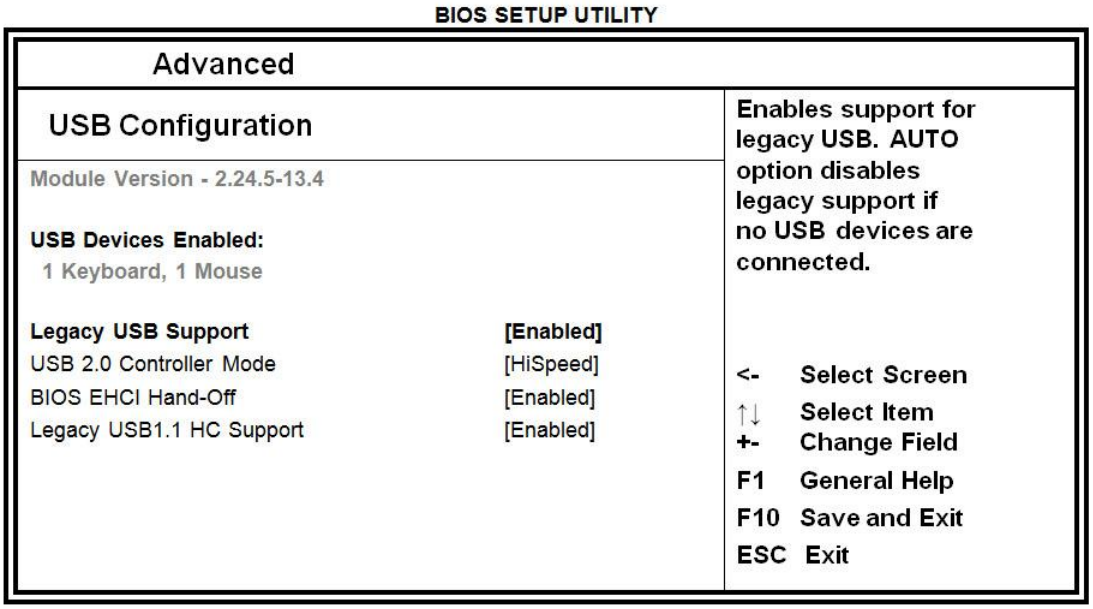
Suspend Mode

By default, the setting for this field is S1(POS) which is the only option supported.






BIOS SETUP UTILITY
Advanced
AHCI Settings
AHCI Port0 [Not Detected]
AHCI Port1 [Not Detected]
AHCI Port2 [Not Detected]
While entering setup, BIOS auto detect the presence of IDE device. This displays the status of auto detection of IDE devices.


BIOS SETUP UTILITY
Advanced
USB Configuration
Module Version - 2.24.5-13.4
USB Devices Enabled:
1 Keyboard, 1 Mouse
Legacy USB Support [Enabled]
USB 2.0 Controller Mode [HiSpeed]
BIOS EHCI Hand-Off [Enabled]
Legacy USB1.1 HC Support [Enabled]
Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.
<- Select Screen
↑↓ Select Item
+- Change Field
F1 General Help
F10 Save and Exit
ESC Exit

The USB Configuration menu is used to read USB configuration information and configure the USB settings.

Legacy USB Support

Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.

USB 2.0 Controller Mode

Configures the USB 2.0 controller in HiSpeed (480Mbps) or FullSpeed (12Mbps).This option is enabled by HiSpeed.

BIOS EHCI Hand-Off

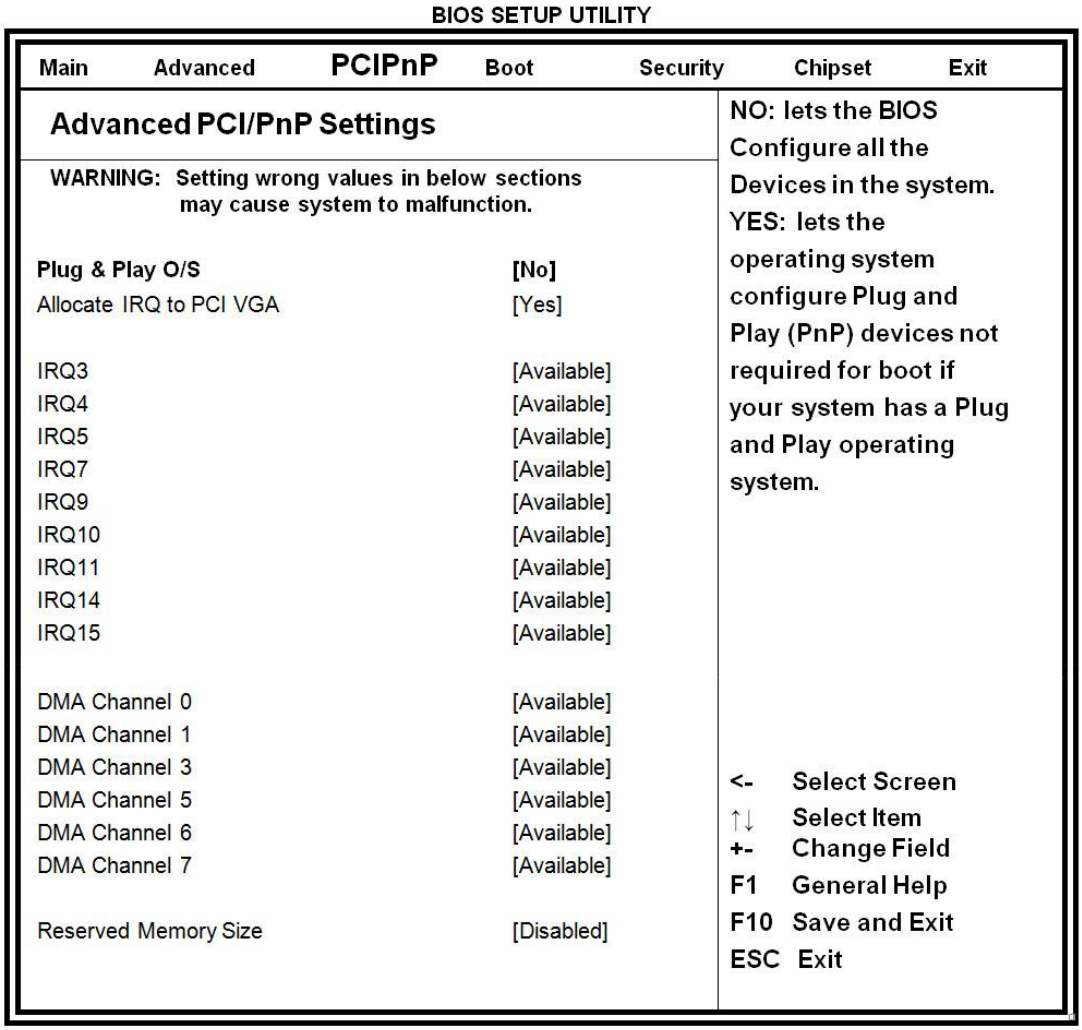
Enabled/Disabled. This is a workaround for Oses without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

Legacy USB1.1 HC Support

Support USB1.1 HC.

PCIPnP Settings

This option configures the PCI/PnP settings.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Exit
Advanced PCI/PnP Settings
WARNING: Setting wrong values in below sections may cause system to malfunction.
Plug & Play O/S [No]
Allocate IRQ to PCI VGA [Yes]
IRQ3 [Available]
IRQ4 [Available]
IRQ5 [Available]
IRQ7 [Available]
IRQ9 [Available]
IRQ10 [Available]
IRQ11 [Available]
IRQ14 [Available]
IRQ15 [Available]
DMA Channel 0 [Available]
DMA Channel 1 [Available]
DMA Channel 3 [Available]
DMA Channel 5 [Available]
DMA Channel 6 [Available]
DMA Channel 7 [Available]
Reserved Memory Size [Disabled]
NO: lets the BIOS Configure all the Devices in the system. YES: lets the operating system configure Plug and Play (PnP) devices not required for boot if your system has a Plug and Play operating system.
<- Select Screen
↑↓ Select Item
+- Change Field
F1 General Help
F10 Save and Exit
ESC Exit

Plug & Play O/S

This lets BIOS configure all devices in the system or lets the OS configure PnP devices not required for boot if your system has a Plug and Play OS.

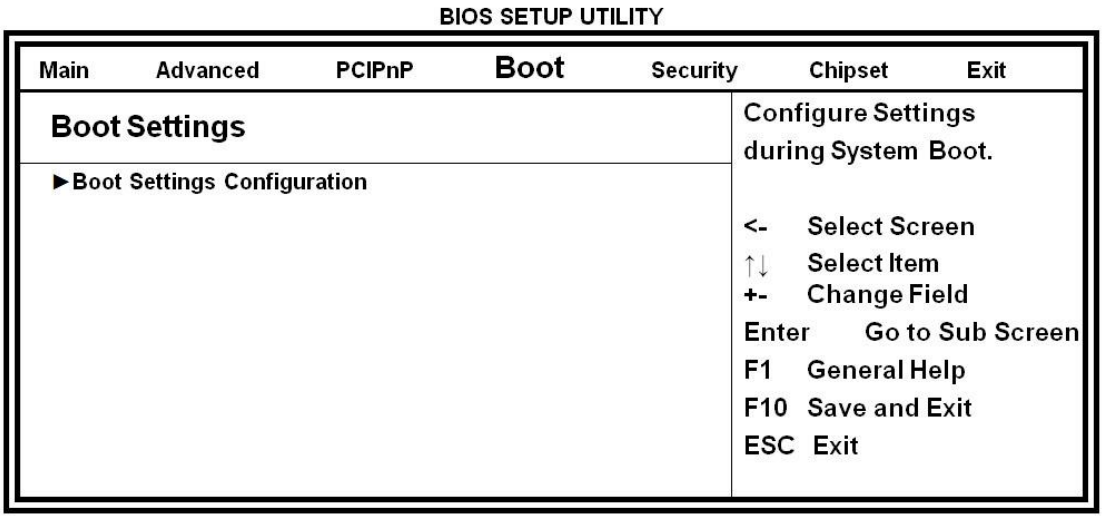
Allocate IRQ to PCI VGA

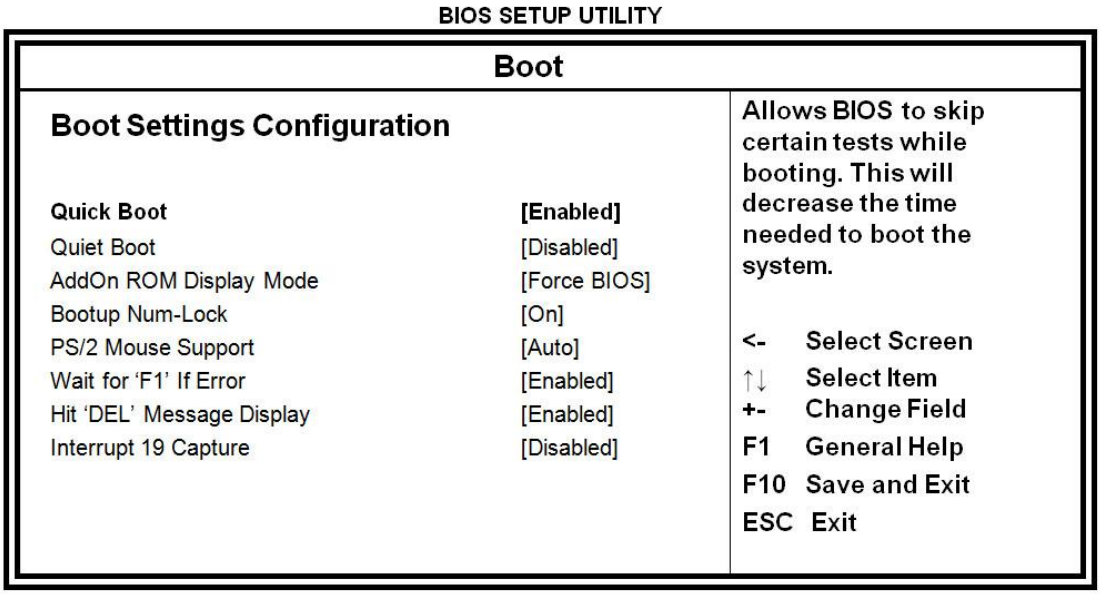
This assigns IRQ to PCI VGA card if card requests IRQ or doesn't assign IRQ to PCI VGA card even if card requests an IRQ.

IRQ#

Use the IRQ# address to specify what IRQs can be assigned to a particular peripheral device.

Boot Settings




BIOS SETUP UTILITY
Boot
Boot Settings Configuration
Quick Boot [Enabled]
Quiet Boot [Disabled]
AddOn ROM Display Mode [Force BIOS]
Bootup Num-Lock [On]
PS/2 Mouse Support [Auto]
Wait for 'F1' If Error [Enabled]
Hit 'DEL' Message Display [Enabled]
Interrupt 19 Capture [Disabled]
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
<- Select Screen
↑↓ Select Item
+- Change Field
F1 General Help
F10 Save and Exit
ESC Exit

Quick Boot

This allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

Quite Boot

When disabled, this displays normal POST messages. When enabled, this displays OEM Logo instead of POST messages.

AddOn ROM Display Mode

This allows user to force BIOS/Option ROM of add-on cards to be displayed during quiet boot.

Bootup Num-Lock

This select the power-on state for numlock.

PS/2 Mouse Support

This select support for PS/2 mouse.

Wait for ‘F1’ If Error

When set to Enabled, the system waits for the F1 key to be pressed when error occurs. This allows option ROM to trap interrupt 19.

Hit <DEL> Message Display

This displays “Press <DEL> to run Setup” in POST.

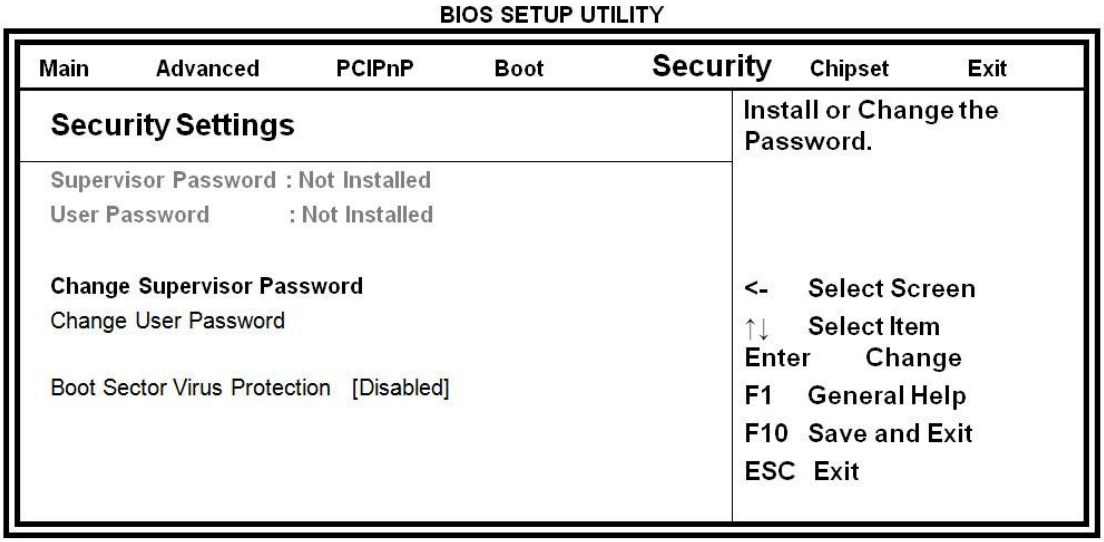
Interrupt 19 Capture

This allows option ROMs to trap interrupt 19.

Security Settings

This setting comes with two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

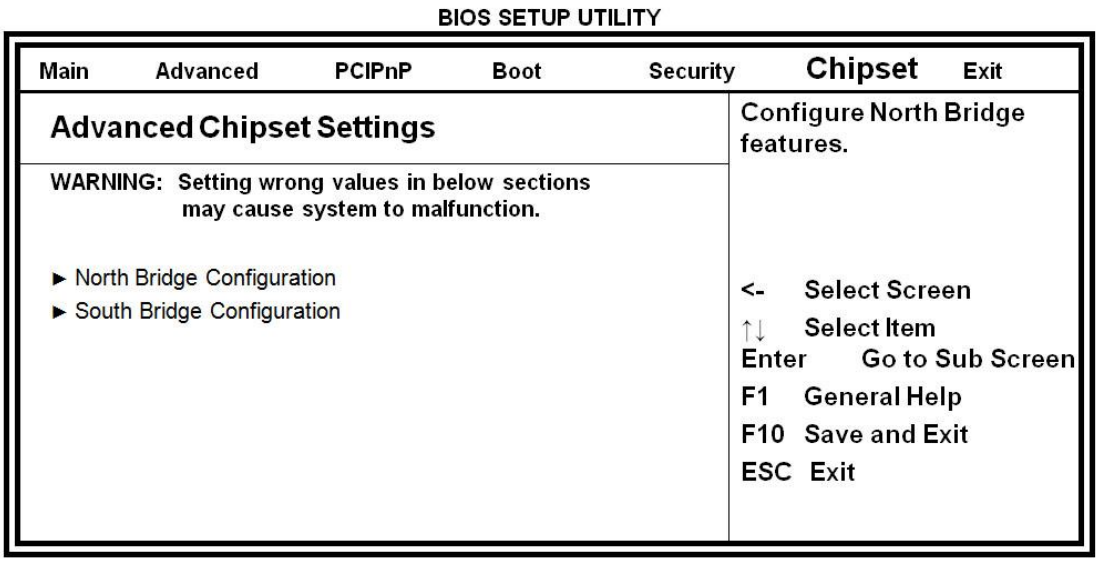
To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

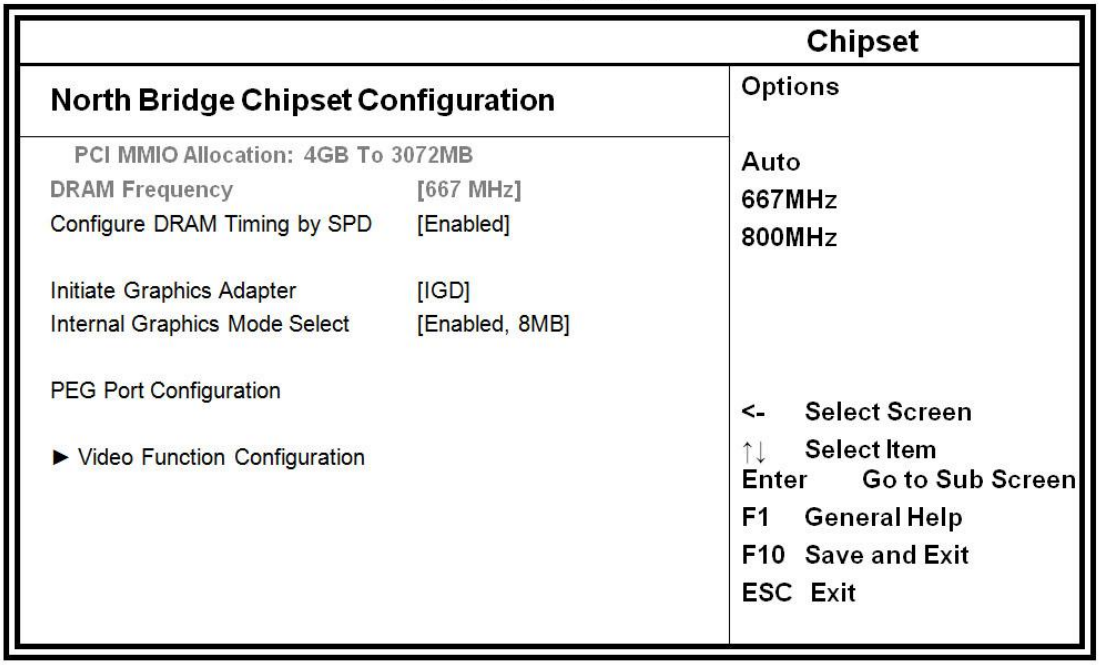


Advanced Chipset Settings

This setting configures the north bridge, south bridge and the ME subsystem.

WARNING! Setting the wrong values may cause the system to malfunction.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Exit
Advanced Chipset Settings
WARNING: Setting wrong values in below sections may cause system to malfunction.
► North Bridge Configuration
► South Bridge Configuration
Configure North Bridge features.
<- Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit



DRAM Frequency

This option supports only 667 MHz – which is the default setting.

Configure DRAM Timing by SPD

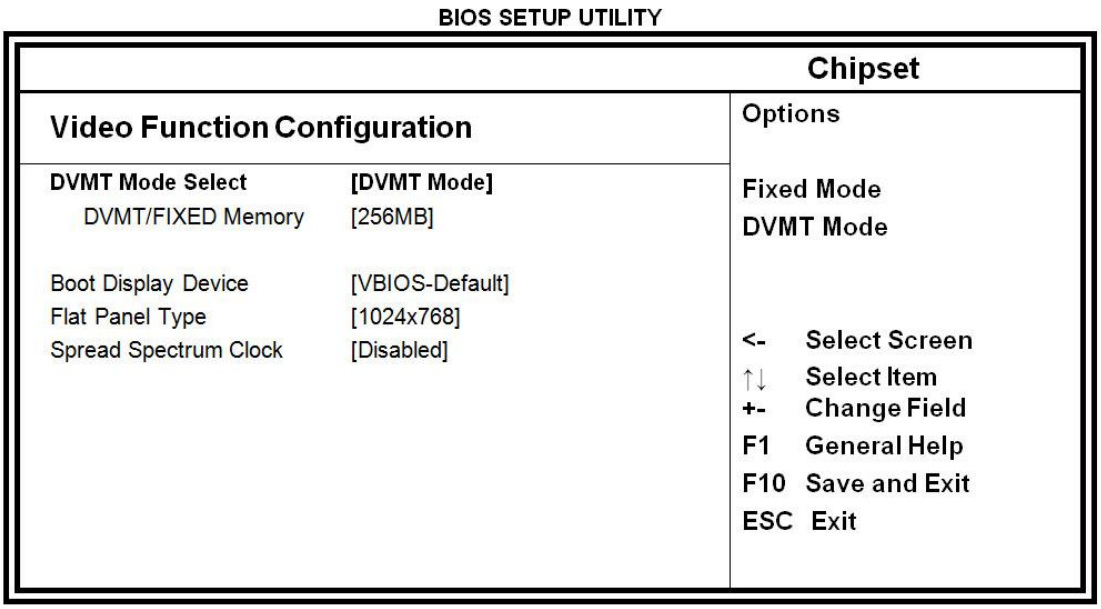
When this item is enabled, the DRAM timing parameters are set according to the DRAM SPD (Serial Presence Detect). When disabled, you can manually set the DRAM timing parameters through the DRAM sub-items.

Initiate Graphic Adapter

Select which graphics controller to use as the primary boot device. This option, by default, is set to IGD.

Internal Graphics Mode Select

Use the feature to set the amount of system memory to be used by the Internal. graphics device. expansion cards that require a specified area of memory to work properly.



DVMT Mode Select

Select the control mode of memory built-in graphics capabilities. This option, by default, is set to DVMT Mode.

DVMT/FIXED Memory

Sets the maximum memory size assigned to the integrated graphics capabilities. This option, by default, is set to 256MB.

Boot Display Device

This option is used to select the display device used by the system when it boots.

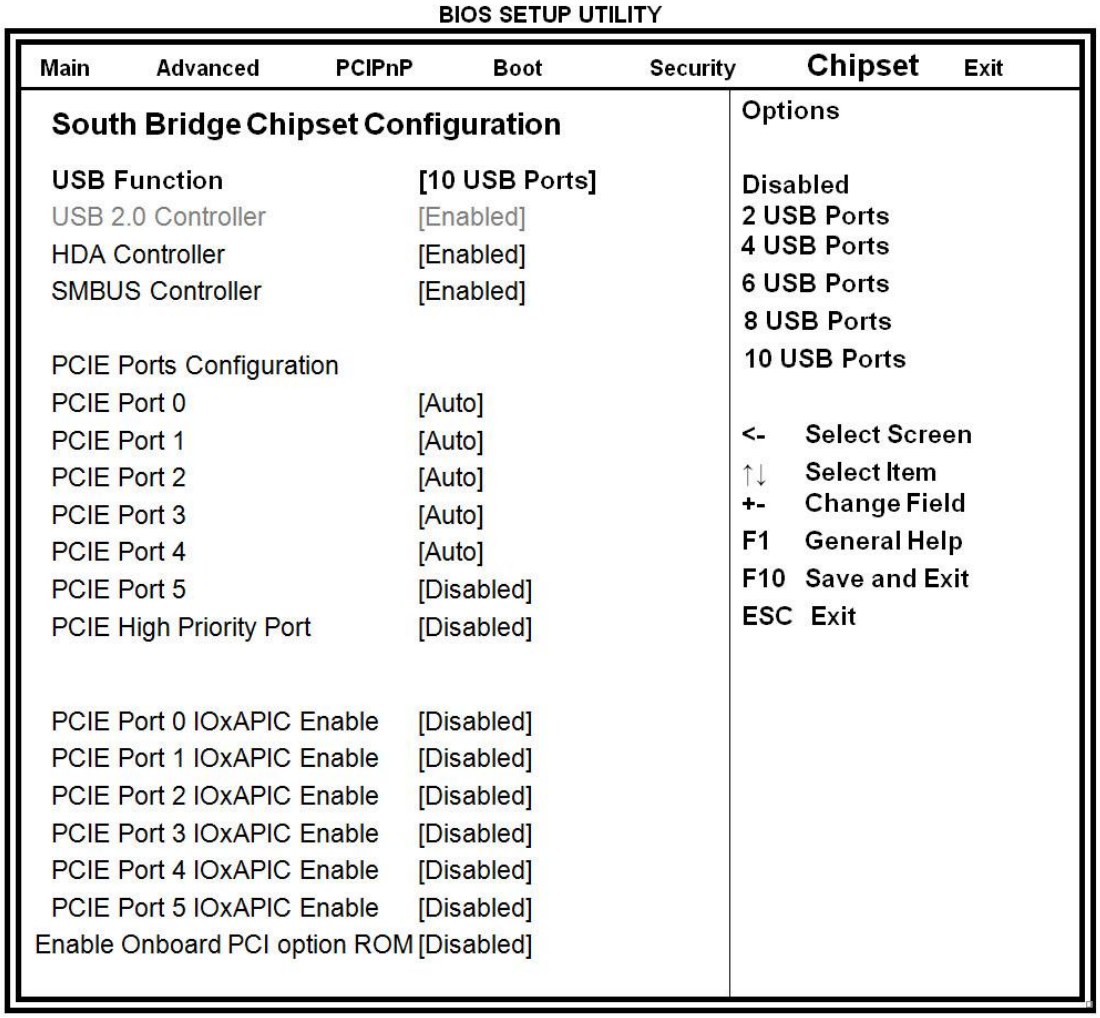
Flat Panel Type

This option is used to select the type of flat panel connected to the system.

Options include: 640x480 / 800x600 / 1024x768 / 1280x768 / 1280x800 / 1280x600.

Spread Spectrum Clock

By default, this field is set to Disabled.



USB Function

This option enables the number of USB ports desired or disables the USB function.

USB 2.0 Controller

This option is enabled by default.

HDA Controller

This option is used to enable the Southbridge high definition audio controller.

SMBUS Controller

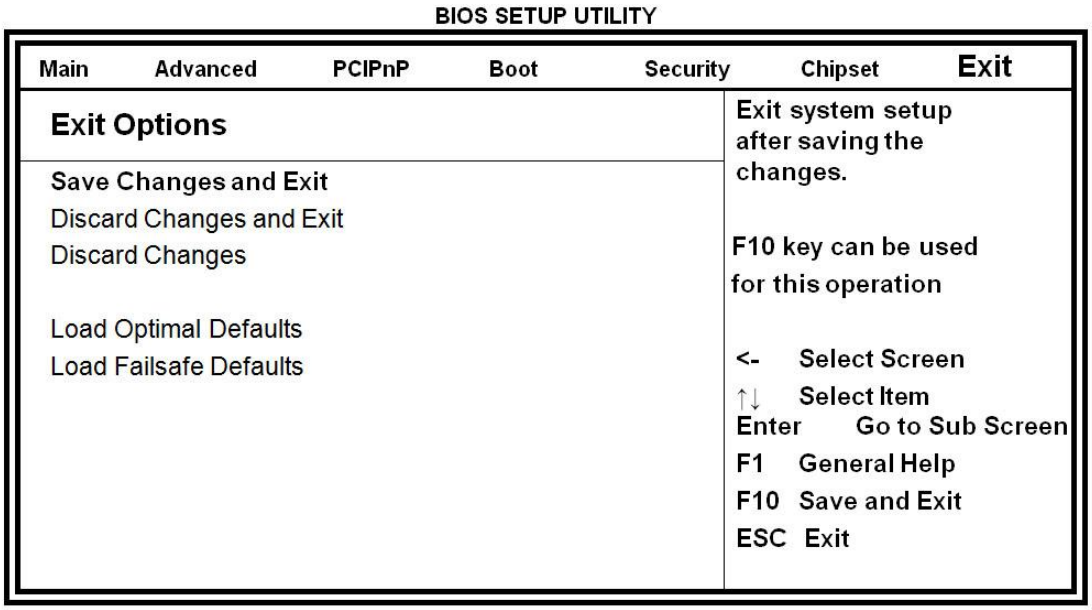
This option is enabled by default.

Enable Onboard PCI option ROM

This option is disabled by default.

Exit Setup

The exit setup has the following settings which are:



Save Changes and Exit

This option allows you to determine whether or not to accept the modifications and save all changes into the CMOS memory before exit.

Discard Changes and Exit

This option allows you to exit the Setup utility without saving the changes you have made in this session.

Discard Changes

This option allows you to discard all the changes that you have made in this session.

Load Optimal Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

Load Failsafe Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

Appendix

A-1 Watchdog Timer Configuration

The WDT is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sorts of circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

Sample Code:

File of the W627UHG.CPP

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include "W627UHG.H"
#include <dos.h>
//---------------------------------------------------------------------------
unsigned int W627UHG_BASE;
void Unlock_W627UHG (void);
void Lock_W627UHG (void);
//---------------------------------------------------------------------------
unsigned int Init_W627UHG(void)
{
        unsigned int result;
        unsigned char ucDid;

        W627UHG_BASE = 0x4E;
        result = W627UHG_BASE;

        ucDid = Get_W627UHG_Reg(0x20);
```

```
        if (ucDid == 0xA2)      //W83627UHG??
        {       goto Init_Finish;       }

        W627UHG_BASE = 0x2E;
        result = W627UHG_BASE;

        ucDid = Get_W627UHG_Reg(0x20);
        if (ucDid == 0xA2)      //W83627UHG??
        {       goto Init_Finish;       }

        W627UHG_BASE = 0x00;
        result = W627UHG_BASE;

Init_Finish:
        return (result);
}
//-----------------------------------------------------------------------
void Unlock_W627UHG (void)
{
        outportb(W627UHG_INDEX_PORT, W627UHG_UNLOCK);
        outportb(W627UHG_INDEX_PORT, W627UHG_UNLOCK);
}
//-----------------------------------------------------------------------
void Lock_W627UHG (void)
{
        outportb(W627UHG_INDEX_PORT, W627UHG_LOCK);
}
//-----------------------------------------------------------------------
void Set_W627UHG_LD( unsigned char LD)
{
        Unlock_W627UHG();
        outportb(W627UHG_INDEX_PORT, W627UHG_REG_LD);
        outportb(W627UHG_DATA_PORT, LD);
        Lock_W627UHG();
}
//-----------------------------------------------------------------------
```

```
void Set_W627UHG_Reg( unsigned char REG, unsigned char DATA)
{
        Unlock_W627UHG();
        outportb(W627UHG_INDEX_PORT, REG);
        outportb(W627UHG_DATA_PORT, DATA);
        Lock_W627UHG();
}
//---------------------------------------------------------------------------
unsigned char Get_W627UHG_Reg(unsigned char REG)
{
        unsigned char Result;
        Unlock_W627UHG();
        outportb(W627UHG_INDEX_PORT, REG);
        Result = inportb(W627UHG_DATA_PORT);
        Lock_W627UHG();
        return Result;
}
//---------------------------------------------------------------------------
```

File of the W627UHG.H

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#ifndef __W627UHG_H
#define __W627UHG_H                                     1
//---------------------------------------------------------------------------
#define    W627UHG_INDEX_PORT                           (W627UHG_BASE)
#define    W627UHG_DATA_PORT                            (W627UHG_BASE+1)
//---------------------------------------------------------------------------
#define    W627UHG_REG_LD                               0x07
//---------------------------------------------------------------------------
#define W627UHG_UNLOCK                                  0x87
#define    W627UHG_LOCK                                 0xAA
//---------------------------------------------------------------------------
unsigned int Init_W627UHG(void);
void Set_W627UHG_LD( unsigned char);
void Set_W627UHG_Reg( unsigned char, unsigned char);
unsigned char Get_W627UHG_Reg( unsigned char);
//---------------------------------------------------------------------------
#endif      //__W627UHG_H
```

File of the MAIN.CPP

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include <dos.h>
#include <conio.h>
#include <stdio.h>
#include <stdlib.h>
#include "W627UHG.H"
//---------------------------------------------------------------------------
int main (void);

void WDTInitial(void);
void WDTEnable(unsigned char);
void WDTDisable(void);

//---------------------------------------------------------------------------
int main (void)
{
        char SIO;

        SIO = Init_W627UHG();
        if (SIO == 0)
        {
        .printf("Can not detect Winbond 83627UHG, program abort.\n");
        .....return(1);
        }

        WDTInitial();
        WDTEnable(10);
        WDTDisable();
        return 0;
}
```

```
//---------------------------------------------------------------------------
void WDTInitial(void)
{
    unsigned char bBuf;
    Set_W627UHG_LD(0x08); ..... //switch to logic device 8
    bBuf = Get_W627UHG_Reg(0x30);
    bBuf &= (~0x01);
    Set_W627UHG_Reg(0x30, bBuf); ..... //Enable WDTO
}
//---------------------------------------------------------------------------
void WDTEnable(unsigned char NewInterval)
{
    unsigned char bBuf;

    Set_W627UHG_LD(0x08); .....
    .....
    .....
    //switch to logic device 8
    Set_W627UHG_Reg(0x30, 0x01); ..... //enable timer
    bBuf = Get_W627UHG_Reg(0xF5);
    bBuf &= (~0x08);
    Set_W627UHG_Reg(0xF5, bBuf); ..... //count mode is second

    Set_W627UHG_Reg(0xF6, NewInterval); ..... //set timer
}
//---------------------------------------------------------------------------
void WDTDisable(void)
{
    Set_W627UHG_LD(0x08); .....
    .....
    .....
    //switch to logic device 8
    Set_W627UHG_Reg(0xF6, 0x00); ..... //clear watchdog timer
    Set_W627UHG_Reg(0x30, 0x00); .....
    .....
    //watchdog disabled
}
//---------------------------------------------------------------------------
```

A-2 Digital I/O Sample Code

File of the W627UHG.H

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#ifndef __W627UHG_H
#define __W627UHG_H                                    1
//---------------------------------------------------------------------------
#define    W627UHG_INDEX_PORT                          (W627UHG_BASE)
#define    W627UHG_DATA_PORT                           (W627UHG_BASE+1)
//---------------------------------------------------------------------------
#define    W627UHG_REG_LD                              0x07
//---------------------------------------------------------------------------
#define W627UHG_UNLOCK                                 0x87
#define    W627UHG_LOCK                                0xAA
//---------------------------------------------------------------------------
unsigned int Init_W627UHG(void);
void Set_W627UHG_LD( unsigned char);
void Set_W627UHG_Reg( unsigned char, unsigned char);
unsigned char Get_W627UHG_Reg( unsigned char);
//---------------------------------------------------------------------------
#endif      //__W627UHG_H
```

File of the W627UHG.CPP

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include "W627UHG.H"
#include <dos.h>
//---------------------------------------------------------------------------
unsigned int W627UHG_BASE;
void Unlock_W627UHG (void);
void Lock_W627UHG (void);
//---------------------------------------------------------------------------
unsigned int Init_W627UHG(void)
{
        unsigned int result;
        unsigned char ucDid;

        W627UHG_BASE = 0x4E;
        result = W627UHG_BASE;

        ucDid = Get_W627UHG_Reg(0x20);
        if (ucDid == 0xA2)      //W83627UHG??
        {       goto Init_Finish;       }

        W627UHG_BASE = 0x2E;
        result = W627UHG_BASE;

        ucDid = Get_W627UHG_Reg(0x20);
        if (ucDid == 0xA2)      //W83627UHG??
        {       goto Init_Finish;       }

        W627UHG_BASE = 0x00;
        result = W627UHG_BASE;
```

```
Init_Finish:
        return (result);
}
//-----------------------------------------------------------------------
void Unlock_W627UHG (void)
{
        outportb(W627UHG_INDEX_PORT, W627UHG_UNLOCK);
        outportb(W627UHG_INDEX_PORT, W627UHG_UNLOCK);
}
//-----------------------------------------------------------------------
void Lock_W627UHG (void)
{
        outportb(W627UHG_INDEX_PORT, W627UHG_LOCK);
}
//-----------------------------------------------------------------------
void Set_W627UHG_LD( unsigned char LD)
{
        Unlock_W627UHG();
        outportb(W627UHG_INDEX_PORT, W627UHG_REG_LD);
        outportb(W627UHG_DATA_PORT, LD);
        Lock_W627UHG();
}
//-----------------------------------------------------------------------
void Set_W627UHG_Reg( unsigned char REG, unsigned char DATA)
{
        Unlock_W627UHG();
        outportb(W627UHG_INDEX_PORT, REG);
        outportb(W627UHG_DATA_PORT, DATA);
        Lock_W627UHG();
}
//-----------------------------------------------------------------------
unsigned char Get_W627UHG_Reg(unsigned char REG)
{
        unsigned char Result;
        Unlock_W627UHG();
        outportb(W627UHG_INDEX_PORT, REG);
        Result = inportb(W627UHG_DATA_PORT);
        Lock_W627UHG();
```

```
        return Result;
}
//---------------------------------------------------------------------------
```

File of the MAIN.CPP

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include <dos.h>
#include <conio.h>
#include <stdio.h>
#include <stdlib.h>
#include "W627UHG.H"
//---------------------------------------------------------------------------
int main (void);

void Dio5Initial(void);
void Dio5SetOutput(unsigned char);
unsigned char Dio5GetInput(void);
void Dio5SetDirection(unsigned char);
unsigned char Dio5GetDirection(void);
//---------------------------------------------------------------------------
int main (void)
{
        char SIO;
        SIO = Init_W627UHG();
        if (SIO == 0)
        {
        printf("Can not detect Winbond 83627UHG, program abort.\n");
        return(1);
        }

        Dio5Initial();                  //for GPIO50..57
        Dio5SetDirection(0x0F);       //GP50..53 = input, GP54..57=output
        printf("Current DIO direction = 0x%X\n", Dio5GetDirection());
        printf("Current DIO status = 0x%X\n", Dio5GetInput());
```

```
        printf("Set DIO output to high\n");
        Dio5SetOutput(0x0F);

        printf("Set DIO output to low\n");
        Dio5SetOutput(0x00);

        return 0;
}
//---------------------------------------------------------------------------
void Dio5Initial(void)
{
        unsigned char ucBuf;

        Set_W627UHG_LD(0x08);       //switch to logic device 8
                                    //enable the GP5 group
        ucBuf = Get_W627UHG_Reg(0x30);
        ucBuf |= 0x02;
        Set_W627UHG_Reg(0x30, ucBuf);
}
//---------------------------------------------------------------------------
void Dio5SetOutput(unsigned char NewData)
{
        Set_W627UHG_LD(0x08);       //switch to logic device 8
        Set_W627UHG_Reg(0xE1, NewData);
}
//---------------------------------------------------------------------------
unsigned char Dio5GetInput(void)
{
        unsigned char result;

        Set_W627UHG_LD(0x08);       //switch to logic device 8
        result = Get_W627UHG_Reg(0xE1);
        return (result);
}
//---------------------------------------------------------------------------
```

```
void Dio5SetDirection(unsigned char NewData)
{
        //NewData : 1 for input, 0 for output
        Set_W627UHG_LD(0x08);       //switch to logic device 8
        Set_W627UHG_Reg(0xE0, NewData);
}
//-----------------------------------------------------------------------------
unsigned char Dio5GetDirection(void)
{
        unsigned char result;

        Set_W627UHG_LD(0x08);       //switch to logic device 8
        result = Get_W627UHG_Reg(0xE0);
        return (result);
}
//-----------------------------------------------------------------------------
```